BLM

Sierra Front Field Office, Nevada

FINAL ENVIRONMENTAL ASSESSMENT

Winters Ranch Management Plan

DOI-BLM-NV-C020-2009-0001-EA

U.S. Department of the Interior
Bureau of Land Management
Carson City District
Sierra Front Field Office
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NATIONAL SYSTEM OF PUBLIC LANDS

It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

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Winters Ranch Management Plan and Environmental Assessment

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I. INTRODUCTION

A. BACKGROUND

The Bureau of Land Management (BLM) acquired the Winters Ranch property, approximately 991 acres of land and appurtenant water rights located in Washoe Valley, Nevada (Map1). The land had been grazed by cattle for decades prior to the BLM acquisition, but previous owner John Casey had begun the process with Washoe County to develop the property for residential housing. The local community had a strong desire to maintain the rural character of the area, so following Mr. Casey's death in 1998 the Nevada Land Conservancy led the formation of the Washoe Valley Working Group.[1] The Working Group entered into discussions with the Casey Estate about protecting the resource values of the property, such as preserving the open space, protecting the scenic and historic values, providing access to public lands and recreational opportunities, and managing the wildlife habitat. The assistance provided by the Washoe Valley Working Group, Washoe County, and others ultimately led to the acquisitions by the BLM.

The BLM acquisition was completed in two phases: the Virginian property (457 acres) was purchased in 2002, and the East Casey parcel (533 acres) was purchased in 2005. Both properties were acquired under the authority and funding of the *Southern Nevada Public Land Management Act of 1998* (SNPLMA), which supports the acquisition of environmentally sensitive lands within the State of Nevada. The West Casey parcel, approximately 320 acres of land and appurtenant water rights located west of U.S. 395, has also been nominated for acquisition in Round 10 of SNPLMA under the name "Winters Ranch Property."

The Nevada Land Conservancy (2002) nominated Winters Ranch for acquisition to ensure the "[p]rotection and enhancement of natural, cultural and scenic resources; and [to] provide public compatible recreational and educational opportunities." The BLM (2002 and 2005a) pursued the acquisitions to "implement BLM and Washoe County planning objectives for open space and resource protection."

B. MANAGEMENT VISION

The *Winters Ranch Management Plan* is an interdisciplinary activity plan that would guide management of the acquired lands and appurtenant water rights, and is based on a shared vision for the property that was developed by the planning team and BLM partners. The following vision statement and guiding principles were developed by the team, and to a large extent condense legal mandates, policies, and planning decisions that already direct BLM management of the property.

[1] The members of the Washoe Valley Working Group are listed in Chapter V.

Insert Map 1 here.

Winters Ranch Vision Statement

The acquired Winters Ranch land and water rights, along with adjacent land and water rights that might be acquired in the future, will be retained in public ownership and managed in such a way as to:

- *improve and enhance upland, wetland, riparian, and aquatic wildlife habitats,*
- *maintain the area as undeveloped open space to protect its scenic qualities,*
- *preserve cultural resources,*
- *provide opportunities for dispersed recreation, and*
- *provide for environmental education.*

Principle 1. ***Manage vegetation resources***. A primary focus on the Winters Ranch property would be vegetation management to achieve wildlife habitat, scenic quality, and related goals. Target plant communities would be based on the geographic setting of Winters Ranch, which is in an active transition zone between the Sierra Nevada and the Great Basin ecoregions. The vegetation communities are a mix of species from both ecoregions and are shaped by natural processes and climatic patterns. Wet periods support a greater dominance of riparian and meadow plant species, and dry periods see more xeric species. This ebb and flow of plant communities and associated wildlife species assemblages over long periods of time is the norm for this area. Vegetation management would emphasize native species over exotics, and would aggressively pursue the prevention and control of noxious weed infestations.

Managing Winters Ranch as described in this plan would require an adequate and dependable water supply. Due to regional population growth and increasing demand for limited water resources, the Winters Ranch water rights might be viewed as a potential source for development in the future. The water rights must be retained in public ownership and used onsite, however, to achieve the vegetation and habitat management goals described in this plan.

Focusing management on natural processes to achieve wildlife habitat and scenic values would de-emphasize some other uses of Winters Ranch. Resource extraction and surface occupancy would not be encouraged. For example, a mineral material sale or a lease to construct a building would be considered incompatible with the primary values of the property. Some of these potential uses have already been precluded by previous land use planning decisions or other actions. For example, the area has been withdrawn from operation of the locatable mining laws by Public Land Order No. 7491 (66 FR 36589). Other uses that might serve resource management purposes, such as short-term grazing, could still be considered.

The Winters Ranch property is also in an area designated as "limited to existing roads and trails" (BLM, 2001b). Except for the Nevada Department of Wildlife easement accessing Scripps Wildlife Management Area (WMA), no roads or trails exist on the property. Therefore, use of off-highway vehicles is not currently allowed. Land uses outlined in the vision statement are not compatible with motorized vehicle use on the property, though some limited use might be acceptable to complete management tasks.

Principle 2. ***Manage the Winters Ranch property in a regional context.*** Management of the property would, to the extent possible, address regional concerns. In their resolution supporting the BLM acquisition, the Washoe County Board of Commissioners (2000) noted the proximity of the property to Bowers Mansion Regional Park, Davis Creek Regional Park, Scripps WMA, and Washoe Lake State Park. They pointed to the value of regional planning and how these public properties complement one another.

In addition to Winters Ranch and the aforementioned parks, other properties have been acquired by various agencies with a number of different funding sources and instruments. Examples include (1) the Casey and Ophir Creek properties purchased by the U.S. Forest Service with SNPLMA funds, (2) the Laborde property east of Washoe Valley, which consolidated public lands via a land exchange between the BLM and private interests, (3) the Greil Ranch conservation easement east of Washoe Lake, which used State Question 1 program funds and other funding sources, and (4) the Davis Creek Park expansion, which used County and State Question 1 funds.

Meeting objectives of the *South Valleys Area Plan* (Washoe County, 2008a), protecting Washoe Lake water quality, and complementing wildlife habitat on the Scripps WMA are examples of regional goals that were considered during plan development. Although these goals are not always stated explicitly, they are incorporated into the management plan.

A significant level of public involvement has taken place since the first parcel was nominated for acquisition. Continued public participation would be encouraged during implementation of the *Winters Ranch Management Plan*.

Additional acquisitions that would further the management goals for the area or that would facilitate management would be considered. For example, the BLM is pursuing acquisition of the West Casey parcel and water rights on the west side of U.S. 395 (Map 1). This parcel has high resource values and acquiring it would facilitate management of Ophir Creek and the East Casey parcel.

Principle 3. ***Address existing and potential health and safety concerns.*** Management of Winters Ranch would take into account the health and safety of BLM staff and the public. Currently, no major threats to safety exist on the property, but some issues deserve attention.

Risks to adjacent private property from wildfire on the Winters Ranch land is not a major threat because prevailing winds would normally tend to push fires toward Washoe Lake, and existing fuel breaks afford some protection. A fuel break proposed in the management plan addresses the threat of wildfire to Washoe City. Other fuels projects using various methods might also be appropriate.

There are no landowners downstream of the Winters Ranch property that could be at risk of flooding. The BLM, however, has been approached by Washoe City residents that have experienced flooding along Browns Creek. They would like to improve the drainage through their neighborhood and convey the water quickly to BLM land. These requests would be considered as long as they do not conflict with BLM management objectives for the property.

Once the management plan is implemented and future management actions are considered, highway access to the property might be proposed. Safety would have to be a key factor in locating and designing turnoffs.

Winters Ranch has significant cultural resources, but also has fencing, litter, and other non-historical materials that could pose hazards to casual users of the property. Trash clean-ups began during interim property management and are expected to occur periodically as ongoing management.

Principle 4. ***Minimize day-to-day management.*** In recent years BLM has had reductions in staffing and funding levels. Therefore, long-term intensive management of the property by the BLM is not considered likely. Management systems for the property would be designed to be as passive as possible, while still accomplishing management objectives. Passive systems would still require some operation and maintenance, but day-to-day work tasks would be minimized. Emphasizing passive management is consistent with the first principle of using natural processes to manage plant communities, wildlife habitats, and associated wildlife species.

Adaptive management would guide the passive management approach. In the *BLM Land Use Planning Handbook* (BLM, 2005c), the Office of Environmental Policy and Compliance defines adaptive management as "…a system of management practices based on clearly identified outcomes, monitoring to determine if management actions are meeting outcomes, and, if not, facilitating management changes that will best ensure that outcomes are met or to re-evaluate the outcomes."

On Winters Ranch, the initial approach would be to allow natural processes to move the property toward more stable and properly functioning ecosystems. If a system is out of balance and natural processes are insufficient, management actions would be taken to move the system toward a properly functioning system. For example, if native woody species should be a part of a healthy riparian plant community, but are not present, natural regeneration might reestablish them. If natural regeneration does not occur, however, woody species might be planted. Also, we might allow natural channel-forming processes to bring a degraded stream back to a well-functioning system. If natural processes, such as periodic flooding, do not occur because the stream is entrenched and channelized, then physically reworking the channel, planting streamside vegetation, or other measures might be appropriate.

Finally, there is tremendous public interest in the property. A number of offers have been made to assist in planning and managing the property. Opportunities for achieving goals with outside assistance through the use of volunteers, cooperative agreements, and other methods would be explored. Contributions of this type could greatly assist the BLM in the normal operations and maintenance of the property.

C. PURPOSE AND NEED

The purpose of the *Winters Ranch Management Plan* is to provide management guidance for the acquired lands and water rights in Washoe Valley, Nevada. Prior to the BLM acquisition, the property had been excessively grazed by livestock for many years. Grazing, and irrigating pasture for forage production, had adversely affected the native plant communities and wildlife habitat on the property. Implementing the plan would change the management of the property to prioritize these resources and the values emphasized in the vision statement.

Implementing the plan would reverse some of the adverse impacts, and would meet goals of the *Southern Washoe County Urban Interface Plan Amendment* (BLM, 2001b), such as protecting open space, and visual, recreation, watershed, and wildlife resources. It would also help the BLM to achieve a number of the goals listed in the *Carson City Field Office Consolidated Resource Management Plan*, as indicated by the following Desired Outcomes (BLM, 2001a):

Riparian Management, RIP-2, Section 3:

- Desired Outcome #1: Protect and maintain existing and potential fisheries and riparian areas in good or better condition.

Wildlife, WLD-2, Section 4:

- Desired Outcome #3: Protect and maintain existing and potential fisheries and riparian areas in good or better condition.
- Desired Outcome #4: Maintain or improve wildlife habitat, including riparian/stream habitats, and reduce habitat conflicts while providing for other appropriate resource uses.
- Desired Outcome #5: Maintain or improve the habitat condition of meadow and aquatic areas. Habitat condition for any wildlife species can be defined as the ability of a specific area to supply the forage, cover, water and space requirements for the animal. Habitat condition, therefore, is a measure of habitat quality, and is determined by assessments, surveys and studies.

Fire Management, FIR-2, Section 6:

- Desired Outcome #1: Restore fire as an integral part of the ecosystem, improve the diversity of vegetation and to reduce fire hazard fuels.

Recreation, REC-2, Section 8:

- Desired Outcome #1: Provide a wide range of quality recreation opportunities on public lands under management by the Carson City Field Office.

Visual Resources, VRM-2, Section 8:

- Desired Outcome #1: Protect the visual resource values of Bureau managed public lands against unnecessary and undue degradation.

Cultural Resources, CUL-1, Section 11:

- Desired Outcome #1: Cultural and paleontological resources will be protected to the maximum extent practicable, consistent with other resource values.

D. LAND USE PLAN CONFORMANCE

The *Winters Ranch Management Plan* is in conformance with, and is guided by, the *Southern Washoe County Urban Interface Plan Amendment* (BLM, 2001b) and the *Carson City Field Office Consolidated Resource Management Plan* (BLM, 2001a). The two land use planning documents direct the following actions:

- Manage acquired lands under existing land use plans.
- Retain acquired lands in public ownership under BLM administration.
- Manage acquired lands to protect open space, visual, recreation, watershed, and wildlife resources.
- Close acquired lands to the operation of the mining law and mineral leasing acts.
- Limit motorized vehicles on acquired lands to existing roads and trails.

Additional management guidance is found in BLM Nevada policy for lands acquired under SNPLMA (BLM, 2005b). Specifically, this policy states the following:

- Lands acquired under SNPLMA are for special purposes and require special management considerations to protect the resource values on these lands.
- All purchased lands shall be considered to be "environmentally sensitive," and management will reflect the special values of the purchased lands.
- The protection of the resource values identified in the nomination for acquisition and for which the lands are acquired shall be given priority, and other uses shall be allowed to the extent compatible with the protection of the priority resources.
- Water rights will be managed in a manner that avoids forfeiture or cancellation.

Finally, the plan is consistent with Washoe County planning documents. Winters Ranch lies within the area addressed in the *South Valleys Area Plan*, which presents the County's vision "…to maintain, preserve, and facilitate the planning area's natural and cultural heritage" (Washoe County, 2008a). The *Winters Ranch Management Plan* is also consistent with the *Washoe County Regional Open Space & Natural Resource Management Plan* (Washoe County, 2008b). This plan is aimed at protecting communities from natural hazards, and managing biodiversity, cultural resources, water resources, recreational opportunities, and the visual and scenic character of the region.

II. PROPOSED ACTION AND ALTERNATIVE

A. PROPOSED ACTION

The proposed action is to implement the *Winters Ranch Management Plan* as outlined below. The plan is presented as a set of goals, objectives, and management actions that reflect the management vision described earlier.

To achieve this vision, adaptive management principles would be applied (Williams et al., 2007). Rather than attempting to identify all management actions that would be needed to achieve and sustain the vision, adaptive management (1) acknowledges the uncertainty surrounding resource conditions and resource responses to management, (2) uses a systems approach with explicit objectives, management alternatives, and analytical approaches to identify the most appropriate management strategies, and (3) applies an iterative learning process through monitoring to improve understanding of the system and management over time.

During the initial phase of plan implementation, natural processes and relatively simple management actions would be used to meet the management objectives to the extent possible. As the system changes and our understanding of it grows, new actions would be proposed and implemented.

Goal I – Stream Habitats: ***Restore aquatic and riparian habitats along Ophir, Davis, and Winters creeks, and maintain them in a healthy, functioning condition. Map 2 depicts the potential location and extent of the riparian corridors.***

Management Objectives

A. Reestablish a more natural flow regime for the streams crossing Winters Ranch. Frequent small floods that are associated with channel-forming processes, healthy riparian plant communities, and functioning aquatic habitats would be allowed to occur, and occasional large floods would be accommodated.

B. Restore and maintain the streams to provide healthy, functioning nursery habitat for juvenile fish and aquatic habitat for herptiles, as indicated by appropriate:
   - physical characteristics (e.g., width, depth, sinuosity, bed materials)
   - water quality (e.g., temperature, pH, dissolved solids, dissolved oxygen)
   - biota (e.g., abundance and diversity of fish, herptiles, and macroinvertebrates)

C. Restore and maintain the riparian communities to their full capability, as indicated by their:
   - physical characteristics (e.g., channel width, depth, sinuosity, vertical stability, ability to store and release water)
   - plant communities (e.g., the presence of native and late-seral species, diverse age classes and species composition, ground cover, ability to dissipate energy during high stream flows)
   - wildlife habitat (e.g., habitat characteristics, use by birds, herptiles, and mammals)

Insert Map 2 here.

Management Actions

1. Complete a hydrologic analysis of the stream systems to determine the extent to which the stated objectives can be achieved and what actions would be most effective at achieving them.

2. Design and implement a monitoring program, which would provide adequate information to assess progress toward the stated objectives, and which would point to appropriate management actions using an adaptive management approach.

3. To optimize streamflows in the streams crossing the property, cease diversions that were used to irrigate pasture in the past. Where necessary, seal off existing irrigation ditches with gully plugs or use other means to prevent streamflow losses.

4. Ensure that unauthorized stream diversions are not occurring in the upper watershed, so that Winters Ranch receives the full duty associated with decreed water rights on the streams. If a need is determined, request that the Nevada Division of Water Resources (NDWR) appoint a water commissioner to regulate stream diversions.

5. To maintain the fisheries, consider installing wells to augment instream flows during extended dry periods. In addition to decreed surface rights, the BLM acquired supplemental ground-water rights, which could be used to maintain a desired minimum streamflow. Because the West Casey parcel would be important for managing Ophir Creek flows, a well to maintain minimum flows in Ophir Creek would not be implemented until efforts to acquire the west parcel are completed.

6. File applications with the NDWR to change the terms of BLM-owned water rights and permits that are needed to implement this management plan. For example, it would probably be necessary to file for changes in some points of diversion, and places and manners of use. As the plan is implemented, file for proofs of completion of works and beneficial use, so the BLM can acquire water right certificates for its groundwater. Until certificates are obtained, file applications for extensions of time as necessary to keep the water right permits in good standing.

7. Explore the possibility of an agreement with the Nevada Department of Wildlife (NDOW) to use their Browns Creek water rights on the north end of Winters Ranch. Although Browns Creek intermittently flows through wetlands on this part of the property, the BLM has no water rights on the stream. An agreement with NDOW could ensure a dependable water supply to manage the area.

8. Design measures to dissipate the energy of high flows at the culvert outlets below U.S. 395. Stream engineering, rock or concrete structures, plantings, or other projects may be needed to reduce erosion or excessive flow velocities at the culvert outlets.

9. Remove sections of the Virginia &Truckee (V&T) Railroad grade where it constricts streamflow or impedes stream development processes, such as lateral migration, meander development, and expansion of the riparian community. It should be noted that the railroad grade is a historic property, and any adverse effects would have to be resolved before implementing this action.

10. If passive management does not allow the streams to recover to their full capability due to excessive channelization or entrenchment, consider restoring the stream channels by building meanders, raising bed levels to reconnect streams to their floodplain, or taking other appropriate actions.

11. Provide a stable transition from the culvert outlet to Winters Creek where the stream has become entrenched just below the highway embankment. Stabilization could include gradient control, bank stabilization, plantings, or other measures.

12. Promote natural recruitment of native riparian plant species by preventing disturbance to young plants and enhancing the amount of available water. Where natural regeneration does not occur or progresses too slowly, plant native riparian species to stabilize stream banks, dissipate the energy of flood flows, capture sediment on floodplains, and improve riparian and aquatic habitat.

13. Use prescribed fire, mechanical vegetation treatments (e.g., hand tools, hand pulling), short-term livestock grazing, or other appropriate means to stimulate plant growth, speed restoration of riparian habitats, treat noxious weeds, or otherwise achieve plant community objectives.

14. Explore opportunities to provide habitat for current or future listed or special status species. The vision for Winters Ranch is to manage for healthy, functioning ecological systems rather than single species, however, numerous habitat features could be provided that would be consistent with this vision.

15. Prevent or control infestations of noxious weeds in accordance with the *BLM Carson City Field Office Noxious Weed Treatment Plan* (2008a) or subsequent updates. Populations of bull thistle (*Cirsium vulgare*), Canada thistle (*Cirsium arvense*), musk thistle (*Carduus nutans*), Russian knapweed (*Centaurea repens*), spotted knapweed (*Centaurea stoebe*), diffuse knapweed (*Centaurea diffusa*), hoary cress (*Cardaria draba*), and perennial pepperweed (*Lepidium latifolium*) have been found on the property. Explore opportunities for weed management partnerships with the Washoe-Pleasant Valley Cooperative Weed Management Area, Scripps WMA, Washoe County, Nevada Department of Transportation, and local homeowners.

16. Eliminate bull frogs from Winters Ranch to prevent predation of fish and herptiles, which is crucial to have thriving populations of these species. Seek cooperation with Scripps WMA and adjacent private landowners to also eliminate bull frogs on their property.

Goal II – Wetlands: ***Restore wetland habitats on the Winters Ranch property, and maintain them in a healthy, functioning condition*****.**

Management Objectives

A. Reestablish a hydrologic regime that mimics nature as much as possible, given the constraints that the highway and railroad grade place on water movement.

B. Restore and maintain the marshes and wet meadows to provide healthy, functioning forage habitat for birds and herptiles, and reproduction habitat for amphibians, as indicated by their:
   - plant communities (e.g., the presence of native and late-seral species, or mid-seral species where desirable, and diverse age classes and species composition)
   - wildlife habitat (e.g., habitat characteristics, use by birds and herptiles)

Management Actions

1. Design and implement a monitoring, which would provide adequate information to assess progress toward the stated objectives, and which would point to appropriate management actions using an adaptive management approach.

2. Provide a mosaic of marsh, wet meadow, and upland habitats by initially allowing water to find its own path as it crosses the property. Wetlands on the property would be determined by the places and amounts of water flow, topography, soils, and vegetation, rather than irrigation infrastructure. Allow wetlands to expand and contract during natural wet and dry climatic cycles. Depending on changes that occur over time, consider selectively irrigating areas that: (1) are especially sensitive to water fluctuations, (2) would benefit special status species, or (3) would otherwise help achieve the goals of the plan.

3. Backfill irrigation ditches to the extent necessary to prevent excessive drainage or ponding. By minimizing ditch flow the water would be held on site longer, moving slowly through soils and enhancing wetland habitat.

4. Optimize instream flows and promote periodic flooding of the streams crossing the property as described under Goal I. This would enhance wetland habitats on the floodplains and adjacent to the stream corridors.

5. File applications with the NDWR to change the terms of BLM-owned water right permits that are needed to implement this management plan. For example, it would probably be necessary to file for changes in some points of diversion, and places and manners of use. As the plan is implemented, file for proofs of completion of works and beneficial use, so the BLM can acquire water right certificates for its groundwater. Until certificates are obtained, file applications for extensions of time as necessary to keep the water right permits in good standing.

6. Provide additional drainage paths through the railroad grade to prevent ponding behind the grade and to enhance wetland habitats to the east. It should be noted that the railroad grade is a historic property, and any adverse effects would have to be resolved.

7. Allow natural recruitment of native wetland plant species. Where natural regeneration does not occur or progresses too slowly, plant native obligate and facultative wetland species to improve habitat.

8. Use prescribed fire, mechanical vegetation treatments (e.g., hand tools, hand pulling), short-term livestock grazing, or other appropriate means to stimulate plant growth, speed restoration of wetland habitats, treat noxious weeds, or otherwise achieve plant community objectives.

9. Explore opportunities to provide habitat for current or future listed or special status species. The vision for Winters Ranch is to manage for healthy, functioning ecological systems rather than single species, however, numerous habitat features could be provided that would be consistent with this vision.

10. Prevent or control infestations of noxious weeds in accordance with the *BLM Carson City Field Office Noxious Weed Treatment Plan* (2008a) or subsequent updates. Populations of bull thistle (*Cirsium vulgare*), Canada thistle (*Cirsium arvense*), musk thistle (*Carduus nutans*), Russian knapweed (*Centaurea repens*), spotted knapweed (*Centaurea stoebe*), diffuse knapweed (*Centaurea diffusa*), hoary cress (*Cardaria draba*), and perennial pepperweed (*Lepidium latifolium*) have been found on the property. Explore opportunities for weed management partnerships with the Washoe-Pleasant Valley Cooperative Weed Management Area, Scripps WMA, Washoe County, Nevada Department of Transportation, and local homeowners.

11. Eliminate bull frogs from Winters Ranch to prevent predation of fish and herptiles, which is crucial to have thriving populations of these species. Seek cooperation with Scripps WMA and other adjacent landowners to also eliminate bull frogs on their property.

Goal III – Terrestrial Habitats: ***Restore upland habitats on the Winters Ranch property, and maintain them in a healthy, functioning condition*****.**

Management Objectives

A. Restore and maintain upland vegetation to provide healthy, functioning habitat for birds, mammals, and herptiles, as indicated by:
   - the presence of native plant species
   - early-seral plant communities progressing through natural succession
   - habitat fragmentation being minimized
   - diverse sagebrush habitats that support a healthy understory of native bunchgrasses and forbs
   - bird, mammal, and herptile populations achieving their potential in some areas at all times

Management Actions

1. Design and implement a monitoring, which would provide adequate information to assess progress toward the stated objectives, and which would point to appropriate management actions using an adaptive management approach.

2. Allow natural regeneration of native upland plant species. Where natural regeneration does not occur, or progresses too slowly, plant or seed native species to improve habitat.

3. Remove perches used by predatory birds, such as t-posts and railroad ties used as fence posts where the fencing is not needed, to reduce impacts on mammal, herptile, and small bird populations. Removal of these materials would follow a consultation with a cultural resource specialist to ensure that historic properties are not affected.

4. Use prescribed fire, mechanical vegetation treatments (e.g., mastication, hand tools, hand pulling), short-term livestock grazing, or other appropriate means to stimulate plant growth, speed restoration of upland habitats, treat noxious weeds, or otherwise achieve plant community objectives.

5. Restrict motorized vehicle access on the property so that only the existing NDOW road easement is available for public use. Occasional use of vehicles elsewhere by BLM or other authorized personnel would be allowed for administrative purposes, such as implementing projects and fire suppression.

6. Repair fencing near the terminus of the NDOW easement where it enters Scripps WMA. Repair the existing wooden gate or replace it with fencing so vehicles using the NDOW road cannot drive on to Winters Ranch land. Maintain interior and boundary fences.

7. Prevent or control infestations of noxious weeds in accordance with the *BLM Carson City Field Office Noxious Weed Treatment Plan* (2008a) or subsequent updates. Populations of bull thistle (*Cirsium vulgare*), Canada thistle (*Cirsium arvense*), musk thistle (*Carduus nutans*), Russian knapweed (*Centaurea repens*), spotted knapweed (*Centaurea stoebe*), diffuse knapweed (*Centaurea diffusa*), hoary cress (*Cardaria draba*), and perennial pepperweed (*Lepidium latifolium*) have been found on the property. Explore opportunities for weed management partnerships with the Washoe-Pleasant Valley Cooperative Weed Management Area, Scripps WMA, Washoe County, Nevada Department of Transportation, and local homeowners.

Goal IV – Visual Resources: ***Maintain open space on Winters Ranch and preserve the scenic qualities of the property.***

Management Objectives

A. Protect open space and visual resources on Winters Ranch in accordance with current BLM policy on SNPLMA acquisitions (BLM, 2005b). The policy affirms that SNPLMA acquisitions are completed for special purposes, and directs the BLM to protect the resource values identified in the Winters Ranch acquisition nomination, which include open space and visual resources.

B. Prevent unnecessary and undue degradation of visual resources on Winters Ranch in accordance with the *Carson City Field Office Consolidated Resource Management Plan* (BLM, 2001a). Visual resource management objectives have not been established for the acquired property, and to do so would require a land use planning decision. Until this is completed, the scenic quality of the property would be maintained.

Management Actions

1. Complete a contrast rating for any proposed management activity to assess the potential visual impacts on the property.

2. Screen applications for land use authorizations (e.g., rights-of-way, leases, or permits) to ensure that no adverse impacts would occur to the scenic quality or other resource values for which the Winters Ranch was acquired.

3. Design and locate any new access roads, trails, parking areas, kiosks, signs, or other developments to avoid adverse visual impacts. Maintain clear views of the V&T Railroad grade and the Ophir Mill Assay Office.

4. Coordinate periodic trash clean-ups with volunteers and outside groups. Accumulation of trash detracts from the scenic quality of the property, especially along the U.S. 395 right-of-way.

Goal V – Recreation: ***Provide recreation opportunities on the Winters Ranch property that are consistent with the management vision and guiding principles of this plan.***

Management Objectives

A. Manage Winters Ranch for dispersed, non-motorized, casual-use activities that do not conflict with the principal objectives of protecting and enhancing natural, cultural, and scenic resources. Compatible uses include activities such as hiking, wildlife viewing, and amateur photography. Limited equestrian use could also occur, but would not be emphasized by developing horse trailer parking or other facilities. Except for existing

encumbrances, such as the NDOW road easement, only limited motorized vehicle use for management activities would be allowed on the property.

B. Design and develop infrastructure to meet pedestrian-based recreation needs, including trailhead and trail development, and regulatory and informational signage. Formal pedestrian trails, restroom or sanitation facilities, and other developments may be identified over time, and addressed through an adaptive management process. Future development would depend on the amounts and types of recreation use, observed environmental impacts due to recreation use, resource conflicts, and other factors.

Management Actions

1. Consider applications for Special Recreation Permits on a case-by-case basis only for those activities that are consistent with the goals and objectives of this management plan.

2. Enforce the "limited to existing roads and trails" designation for OHV use, which restricts vehicle travel to the NDOW road easement. Inform visitors that off-road vehicle travel is prohibited through signage and other forms of public outreach.

3. Identify potential areas for trail alignments suitable for casual use. Based on monitoring and the adaptive management process, design and develop casual use trails in appropriate locations. Coordinate planning with partner agencies and ensure consistency with the trail management objectives in plans prepared by Washoe County (2008a and 2008b).

4. Explore the possibility of using the culvert passage under U.S. 395 to link Davis Creek County Park with Winters Ranch for recreation use. Davis Creek County Park has developed camping, parking, picnic areas, and restrooms, which could complement the undeveloped nature of Winters Ranch.

5. Develop a signing strategy for Winters Ranch that would provide regulatory and informational messages to users. Emphasize the *Tread Lightly* and *Leave No Trace* programs to meet management objectives.

Goal VI – Environmental Education and Interpretation: ***Provide environmental education and interpretive opportunities at Winters Ranch***

Management Objectives

A. Increase public awareness of resource management objectives, recreation opportunities, visitor use restrictions, and existing and potential health and safety issues.

B. Develop partnerships with other agencies, nongovernmental organizations, and volunteers to provide information about the natural setting, cultural resources, and management of Winters Ranch.

Management Actions

1. Identify environmental education and interpretive themes, mediums, and potential sites and related trail locations. Potential subjects include:
   - geographic setting and physical environment (e.g., geology and hydrology)
   - biological resources (e.g., plant communities and wildlife habitats)
   - history and cultural resources
   - health and safety awareness (e.g., noxious weeds, fire prevention)

2. Foster partnerships to assist in the development, design, and delivery of environmental education and interpretive opportunities.

Goal VII – Health, Safety, and Visitor Access: ***Manage Winters Ranch to protect the health and safety of the public and employees, and to provide for visitor access.***

Management Objectives

A. Eliminate or manage existing or potential threats to public health and safety on Winters Ranch.

B. Inform the public and employees of existing or potential public health and safety concerns on Winters Ranch.

C. Ensure any developments meet BLM standards for public health and safety, and comply with the *Americans with Disabilities Act of 1990* and the *Architectural Barriers Act of 1968*.

Management Actions

1. Construct a fuel break along the boundary between Winters Ranch and private property in Washoe City (see Map 3). The proposed fuel break would modify the structure, amount, and continuity of flammable vegetation to reduce fire intensity and to provide safer conditions for fire suppression efforts. Project specifications would be developed after consulting with local residents, but the fuel break would be approximately 7,700 feet long and up to 100 feet wide depending on vegetation. Rotary mowers or similar equipment would be used to cut herbaceous and woody vegetation above the ground surface. Patches of vegetation would be left untreated to reduce the visual impact, and shredded vegetation would be left on the ground to stabilize soils and minimize dust levels. To prevent weed infestations, the treated area would be broadcast or drill seeded with fire resistant species using tractors or all-terrain vehicles. Best management practices (BMPs) that would be implemented to protect soil and water resources are outlined in Appendix C. Also, a professional archaeologist would monitor project implementation to ensure that methods used to reduce fuels will effectively protect known historic resources.

Insert Map 3 here.

2. Maintain the established fuel break by periodically removing annual weeds and grasses within the fuels treatment area. Collaborate with adjacent landowners and other partners to plan and implement maintenance activities.

3. Accommodate requests to develop flood relief projects on Winters Ranch to the extent they are compatible with the vision and goals of this management plan. Residents in Washoe City have approached the BLM regarding Browns Creek flooding in the past. Proposed projects would have to be presented to the BLM by Washoe County to be considered.

4. Depending on the amount and types of visitor use on Winters Ranch, consider installing toilets and trash receptacles on the property. If these amenities are provided, explore opportunities to share maintenance responsibilities with Washoe County or other partners.

5. Incorporate universal design elements and standards into all new facilities or upgrades to existing facilities.

6. Incorporate public health and safety messages into public information media.

7. Consider developing a law enforcement agreement with the Washoe County Sheriff's Department to patrol Winters Ranch.

8. Consider developing supplementary rules of conduct for visitors to Winters Ranch in accordance with 43 CFR §8365.1-6. Supplementary rules could be established if significant health or safety issues are discovered that are not adequately addressed by existing laws and regulations. Restrictions that could be considered as supplementary rules include, but are not limited to (1) prohibiting camping, (2) restricting property to day-use only, (3) implementing firearms restrictions, (4) prohibiting use of fire, and (5) requiring leashes for pets.

B. NO ACTION ALTERNATIVE

Under the No Action alternative, the *Winters Ranch Management Plan* would not be adopted. Management of the acquired lands and water rights in Washoe Valley would not be aimed at achieving specific long-term goals and objectives, and would not be based on a comprehensive analysis of the resource issues that exist on the property. Management would be based on a case-by-case assessment of specific issues as they are encountered.

III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter identifies and describes the current condition and trend of elements or resources in the human environment which might be affected by the Proposed Action or No Action alternative.

A. SCOPING AND ISSUE IDENTIFICATION

1. Scoping

The scoping of issues on Winters Ranch began before the management plan and environmental assessment were initiated. John Casey, a previous landowner, had submitted a plan to the county for residential development on the property. Shortly after Mr. Casey's death in 1998, the Nevada Land Conservancy led the formation of the Washoe Valley Working Group (WVWG), which entered into discussions with the Casey Estate about protecting the resource values of the property. According to the Nevada Land Conservancy (pers. comm. Stock, 2008), the original goals of the WVWG included: (1) protecting open space, (2) preserving scenic and historic values, (3) providing access to public lands, (4) accommodating the extension of a trails system and other recreational uses, and (5) retaining wildlife habitat, agricultural uses, and fire and wind breaks. Within a few years, the WVWG developed a detailed management plan with goals, objectives, and management actions that it determined would achieve the resource objectives for Washoe Valley (WVWG, 2002). The WVWG document would be a valuable asset later when BLM staff began internal scoping for the plan.

Local residents interested in maintaining the quality of life in Washoe Valley also sought protection of the property. As early as 1999, local homeowners petitioned the Washoe County Board of Commissioners to preserve Winters Ranch as open space by transferring the land to a public agency (Hall, 1999). The Washoe County Board of Commissioners (2000) adopted a resolution supporting the BLM in its efforts to acquire and manage the Winters Ranch property. The Board cited the property's aesthetic, historical, cultural, watershed, and wildlife values, and noted its recreational value because of its proximity to Bowers Mansion Regional Park, Davis Creek Regional Park, Scripps WMA, and Washoe Lake State Park.

The BLM (2002 and 2005a) subsequently acquired the Virginian and East Casey parcels to provide the public with "…valuable open space along with scenic, wildlife, cultural and recreational resources." Following acquisition of the East Casey parcel, the BLM (2005d) prepared an interim management plan that directed actions that would take place before an interdisciplinary activity plan was written and implemented. Though the BLM had discussed potential management of the property since the first nomination, formal internal scoping began during the development of the interim plan, and culminated in the management vision described in Section I.B. of this plan.

2. Issue Identification

For the purposes of analysis under the *National Environmental Policy Act*, the BLM defines issues as points of disagreement, debate, or dispute with a Proposed Action based on some environmental effect (BLM, 2008b). To warrant analysis in an environmental assessment, an issue must require a reasoned choice between management alternatives. In this case the reasoned choice is to be made between the management recommended in the Proposed Action versus the management that would be allowed under the No Action alternative.

During public scoping and internal BLM discussions, the following management goals were repeatedly recommended for Winters Ranch:

- Maintain Winters Ranch as open space
- Preserve the scenic qualities of the landscape
- Preserve the historical and cultural values on the property
- Maintain and improve vegetation communities and wildlife habitats
- Provide public access for recreation and environmental education opportunities

These goals provided the basis for the Proposed Action in the *Winters Ranch Management Plan*. Some activities that could be authorized under the No Action alternative might be consistent with the stated goals, but other activities might be inconsistent with them. Cattle grazing aimed at maximizing beef production or developing facilities are two examples of many possible uses that could be authorized if the No Action alternative were selected. The key issue to be addressed in the environmental assessment is whether to focus on managing the property to achieve the goals and objectives outlined in the Proposed Action, or to focus on accommodating various land uses even if they could be in conflict with these goals and objectives.

B. ANALYSIS OF THE PROPOSED ACTION AND NO ACTION ALTERNATIVE

1. General Setting

Winters Ranch is in Washoe County, ten miles north of Carson City and 15 miles south of Reno. It is bordered on the west by U.S. 395, on the north by Washoe City, and on the east and south by Scripps WMA.

Winters Ranch lies at the north end of Washoe Valley, a broad, flat structural depression between the Carson Range to the west and the Virginia Range to the east. Most of the property is covered by unconsolidated deposits of relatively recent alluvium, which overlays older alluvium (Rush, 1967). Landslides from Slide Mountain have also deposited coarser materials, such as sand, gravel, and boulders, on the southern part of the property.

Elevations range from approximately 5,030 feet near Washoe Lake to 5,100 feet near the Winters mansion on the west side of the property. Washoe and Little Washoe lakes lie to the east, and receive basin runoff. When lake levels are high enough, Little Washoe Lake drains through a narrow canyon to the north to Steamboat Creek, which continues to flow north until it discharges to the Truckee River east of Vista (Arteaga and Nichols, 1984).

The climate in Washoe Valley is influenced by two distinct climatic regimes: the dry, high desert of the western Great Basin and the alpine Sierra Nevada. As a result, the area experiences a wide range of temperatures (O'Hara, 2006). Based on the record of the nearby Carson City station, normal monthly temperatures range from 33°F in January to 70°F in July. Observed minimum and maximum temperatures were -22°F and 105°F, respectively.

Average annual precipitation is 10.43 inches. Recorded minimum and maximum annual precipitation totals were 4.00 inches in 1990 and 24.23 inches in 1950 (Western Regional Climate Center, 2008). Average annual potential evapotranspiration is approximately 50 inches, far exceeding precipitation (Shevenell, 1996). Average annual snowfall is 20.8 inches, and the annual maximum snowfall of 77.2 inches was recorded in 1952 (Western Regional Climate Center, 2008). The area is subject to occasional flooding, especially in the winter and spring when warm rains and snowmelt combine to maximize runoff.

2. Elements of the Environment Addressed by Supplemental Authorities

When the BLM considers a Federal action, the *National Environmental Policy Act* (NEPA) is only one of many authorities with procedural requirements regarding treatment of elements of the environment. The *BLM NEPA Handbook* (BLM, 2008b) identifies elements of the environment addressed by supplemental authorities that must be considered in all BLM environmental documents. Table 1 lists these elements of the environment, summarizes whether they are present on Winters Ranch, and if present, whether they may be affected by the Proposed Action. Elements of the environment that may be affected by the Proposed Action are further described in this environmental assessment.

Table 1. Summary of Effects of the Proposed Action on Elements of the Environment.

Element of the Environment	Not Present *	Present/ Not Affected *	Present/ May Be Affected**	Rationale in determining that Elements of the Environment are not present or would not be affected as a result of implementation of the Proposed Action.
Areas of Critical Environmental Concern†	√			None are present in the area.
BLM Sensitive Species (Plants)	√			None are present in the area.
Environmental Justice†	√			Not an issue in the area.
Livestock	√			Livestock use is not proposed in the management plan. Any future grazing would require additional NEPA analysis.
Threatened or Endangered Species†	√			Based on a review of the USFWS (2010) website for Nevada's Protected Species.
Wastes, Hazardous or Solid†	√			Environmental site assessments by Science Applications International Corporation (2001) and SERG, Inc (2003a, 2003, 2004) show that hazardous wastes are not present.
Wild and Scenic Rivers†	√			None are present in the area.
Wilderness†	√			None are present in the area.
Air Quality†		√		Fugitive dust resulting from road travel and surface disturbance associated with projects would cause only minor, short-term impacts.
Farm Lands (Prime or Unique)†		√		The NRCS (2010) classifies most of the property as Prime Farmland or Farmland of Statewide Importance. The Proposed Action would not change the suitability as farmland.
Soils			√	Carried forward in the EA.
Water Rights			√	Carried forward under Water Resources.
Water Quality (Surface and Ground)†			√	Carried forward under Water Resources.
Floodplains†			√	Carried forward in the EA.
Wetlands/Riparian Zones†			√	Carried forward in the EA.
Vegetation			√	Carried forward in the EA.
Invasive, Nonnative Species†			√	Carried forward in the EA.
General Wildlife and Fisheries			√	Carried forward under Wildlife and Fisheries.
BLM Sensitive Species (Animals)			√	Carried forward under Wildlife and Fisheries.
Migratory Birds†			√	Carried forward under Wildlife and Fisheries.
Recreation			√	Carried forward in the EA.
Visual Resources			√	Carried forward in the EA.
Cultural Resources†			√	Carried forward in the EA.
Native American Religious Concerns†			√	Carried forward in the EA.

†Elements addressed by supplemental authorities that must be considered in all BLM environmental documents.
*Elements that are "Not Present" or "Present/Not Affected" need not be carried forward in the document.
**Elements that are "Present/May Be Affected" must be carried forward in the document.

3. Resources Present That May Be Affected

a. Soils

Affected Environment

Predominant soil series in the planning area include Ophir loamy sand, Goedecke loamy sand, Sagouspe loamy very fine sand, and Jubilee sandy loam. The Soil Conservation Service (1983) prepared detailed soil map unit descriptions for the *Soil Survey of Washoe County, Nevada, South Part*.

Soils found within the planning area are very deep and poorly to somewhat poorly drained. Surface textures generally range from gravelly sand to sandy loam, and are predominantly neutral in reaction. Much of the area is at risk for flash flooding during high-intensity storms. A seasonally high water table varies from 20 to 40 inches in depth over much of the area, with some soils on the eastern side seasonally ponded and intermixed with beach features and intermittent lakes.

Environmental Consequences

Restoring riparian and wetland habitats under the Proposed Action would benefit the overall soils resource, primarily by reestablishing natural drainage patterns and overall watershed processes. Streambanks along Ophir, Winters, and Browns creeks would be stabilized, and sediment loads would be handled by healthy, functional riparian areas. Upland areas would recover their natural soil moisture regimes and support a more diverse plant community, ensuring stability and minimizing topsoil loss in those areas.

A 100-foot wide fuel break is proposed under the Proposed Action. It would be constructed along the northern property boundary adjacent to Washoe City, directly affecting roughly 15 acres by modifying the structure and amount of vegetation within the project area. The use of equipment can cause soil disturbance, but these impacts would be largely mitigated by applying the best management practices identified in Appendix C, and by the design features of the proposed project, such as leaving brush on site and seeding bare soils.

The adoption of the No Action alternative would result in continued stream bank erosion along Ophir, Winters, and Browns creeks, and continued drainage and watershed stability issues overall. The timeframe for addressing these problems would be uncertain, and without a comprehensive plan, watershed problems would not be addressed in a coordinated manner.

The cumulative effect of implementing the Proposed Action or No Action alternative would be beneficial to soils. Past grazing practices on Winters Ranch left large areas of bare soil that were exposed to erosion. Since the BLM acquired the property these areas have begun to revegetate. Under either alternative plant cover would continue to increase, though the management strategy under the Proposed Action would include vegetation treatments that would enhance ground cover to a greater extent. The Proposed Action also provides management guidance that would make ground-disturbing activities less likely than under the No Action alternative.

b. Water Resources

Affected Environment

Surface Water

Surface Water Supply

The amount and timing of water available for resource management on Winters Ranch depends on the water rights controlled by the BLM and the physical presence of water on the property. A brief summary of the decreed surface water rights on Ophir, Davis, and Winters creeks is provided in Table 2. A more comprehensive description of the surface and ground-water rights is provided in Appendix A-1, and legal descriptions of their places of use are listed in Appendices A-2 through A-7. The manner of use for all the decreed rights is irrigation. To implement the plan, the BLM would apply to the NDWR to change the manner of use to instream flow and other possible uses.

The BLM acquired decreed surface rights with a total annual duty of 5,164.22 acre-feet. Underground water rights that could total as much as 841.316 acre-feet per annum were also acquired. The underground rights are a combination of rights that are either supplemental to the surface rights, or are primary rights that are independent of the surface rights. Supplemental underground rights are available to augment surface flows when the full duty of a surface right cannot be satisfied by streamflow.

Table 2. Summary of Decreed Water Rights on Ophir, Davis, and Winters Creeks Acquired by the BLM.

Source	Proof	Manner of Use	Annual Duty of Decreed Rights on System (acre-feet)		BLM Percentage of Total
			System Total	BLM Total	
Ophir Creek	V02441	Irrigation	4,824.75	2,348.45	49
Davis Creek	V02754	Irrigation	1,350.86	1,173.41	87
Winters Creek	V02756	Irrigation	1,687.98	1,642.36	97

Source: Nevada Division of Water Resources (2008).

The potential for surface flow to physically reach Winters Ranch can be estimated from the water yield of each of the three streams for which the BLM has acquired water rights. Arteaga and Nichols (1984) computed mean annual water yields for the streams by establishing a statistical relationship between precipitation and runoff. They defined water yield as the contribution of surface and ground-water outflow from the Carson Range to Washoe Valley. These water yield estimates are shown in Table 3.

A comparison of the figures in Tables 2 and 3 shows that the annual duties of the BLM-acquired rights for Davis and Winters creeks exceed the water yield estimates for those streams. Arteaga and Nichols (1984) estimated water yield based on average precipitation for the period of 1967

to 1979. Some years will exceed this water yield estimate, and sufficient streamflow would be available to satisfy the annual duties of the decreed rights. More commonly, streamflows would be insufficient to meet the total duties because precipitation would be below average, and because streamflow would be subject to diversion by upstream water right owners in the basin. During years of relatively low water yield, supplemental ground-water rights would be available to augment surface flows.

Table 3. Mean Annual Water Yield Estimates for Ophir, Davis, and Winters Creeks.

Basin	Drainage Area (acres)	Mean Annual Precipitation (inches)	Mean Annual Water Yield (acre-feet)
Ophir Creek	3,730	46.8	6,720
Davis Creek	704	31.9	480
Winters Creek	1,090	35.8	1,060

Source: Arteaga and Nichols (1984).

The estimates of mean annual water yield shown in Table 3 are informative, but they say nothing about the timing of streamflow or the extremes in water yield that could be expected. Thiel Engineering Consultants (2000) used the gaging record for Galena Creek at Galena State Park to estimate monthly water yields for the three streams during the period 1985 to 1997. Estimates for the wettest year (1997), the driest year (1992), and an average year during this period are summarized in Tables 4a, 4b, and 4c, respectively. It should be noted that 1997 was an unusually wet year with January water yield skewed by the New Year's floods.

The figures in Tables 4a, 4b, and 4c suggest that all three streams will yield water to Winters Ranch during all months, even during a dry year. This is not the case since upstream diversions reduce the amount of flow that would reach the valley floor. Actually, all three streams will dry up during most years, especially in the late summer and early fall months. As expected from the water yield estimates, periods of zero flow are greatest on Davis Creek and least on Ophir Creek.

The monthly water yield estimates point out some important flow regime characteristics. First, water yield from Ophir Creek was more than four times the total from Davis and Winters creeks during the period of record. Management strategies for the aquatic and riparian habitat will vary among the streams depending on the reliability of streamflow, which is greatest on Ophir Creek. Second, a wet year can yield several times the runoff that is realized in a dry year. Of course, floods occur during the infrequent wet years, overtopping banks, depositing sediment on floodplains, and enhancing riparian communities. Finally, most of the water yield will typically come during the winter and spring months. Monthly water yields can vary by more than an order of magnitude between wet and dry years during this time of year. The summer and fall months are not likely to see these dramatic differences in water yield, even between wet and dry years, although periods of low flow will be longer in the dry years.

Table 4a. Monthly Water Yield Estimates for Ophir, Davis, and Winters Creeks: Wet Year (1997).

Basin	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total (acre-feet)
Ophir	6,978	567	787	1,117	2,226	1,619	922	495	390	441	337	325	16,202
Davis	498	40	56	80	159	116	66	35	28	31	24	23	1,157
Winters	1,101	89	124	176	351	255	145	78	61	70	53	51	2,556

Source: Thiel Engineering Consultants (2000).

Table 4b. Monthly Water Yield Estimates for Ophir, Davis, and Winters Creeks: Dry Year (1992).

Basin	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total (acre-feet)
Ophir	210	255	265	395	337	222	206	159	158	187	205	228	2,826
Davis	15	18	19	28	24	16	15	11	11	13	15	16	202
Winters	33	40	42	62	53	35	33	25	25	29	32	36	446

Source: Thiel Engineering Consultants (2000).

Table 4c. Monthly Water Yield Estimates for Ophir, Davis, and Winters Creeks: Average Year (1985-1997).

Basin	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total (acre-feet)
Ophir	786	297	390	633	1,077	1,263	689	389	301	311	296	289	6,720
Davis	56	21	28	45	77	90	49	28	22	22	21	21	480
Winters	124	47	62	100	170	199	109	61	48	49	47	46	1,060

Source: Thiel Engineering Consultants (2000).

Surface Water Quality

Based on the authority of the Federal *Clean Water Act*, the State of Nevada has established surface water quality standards as presented in Chapter NAC-445A of the Nevada Administrative Code. Appendix B-1 lists narrative standards that address the general physical, chemical, and biological characteristics of all surface waters in the state (NAC 445A.121).

In addition to the standards applying to all surface waters, specific beneficial uses and standards have been established for waters categorized as Class A, B, C, or D waters. Ophir Creek from State Route 429 (old U.S. 395) to Washoe Lake is a Class B water (NAC 445A.125), which contains the stream segment crossing Winters Ranch. The uses and standards for Class B waters are presented in Appendix B-2. The Class B standards expand on the narrative standards, and establish numeric standards for pH, dissolved oxygen, temperature, fecal coliforms, total phosphorous, and total dissolved solids.

The state prepares a biennial 305(b) report summarizing water quality assessment information (NDEP, 2006), and a 303(d) list which identifies impaired waters that are not achieving the

established standards (NDEP, 2009). The segment of Ophir Creek that crosses Winters Ranch meets the standards for Class B waters, but the segment above S.R. 429 was listed for zinc. Washoe Lake, a Class C water (NAC 445A.126), was added to the Nevada 303(d) list because of mercury in fish tissues (NDEP, 2009).

Groundwater

Groundwater Supply

A summary of the underground water rights acquired for Winters Ranch is shown in Table 5. A more detailed description is provided in Appendix A-1.

Table 5. Summary of Primary and Supplemental Underground Water Rights Acquired by the BLM.

Permit Nos.	Type	Manner of Use	Annual Duty (acre-feet)
68101†, 68111 – 68116	Supplemental	Irrigation	564.6
68117 – 68120	Primary	Irrigation	131.28
66232, 66233, 69433, 69570, 69731	Primary	Recreation, Wildlife	101.37

Source: Nevada Division of Water Resources (2008).

†Permit 68101 currently is a standalone permit with the same place of use as 68111-68116. Staff at the Nevada Division of Water Resources speculates that 68101 will become supplemental to 68111-68116 upon certification (pers. comm. Randles, 2007).

Nearly all groundwater recharge in Washoe Valley comes from precipitation falling on the surrounding mountains (Arteaga and Nichols, 1984). At lower elevations a high proportion of groundwater recharge occurs as streamflow infiltrates alluvial deposits in the canyons and on the valley floor. Groundwater discharge occurs primarily as soil evaporation in areas of shallow groundwater, transpiration by phreatophytes, and domestic and irrigation well pumping. A small amount is also lost to subsurface outflow (Rush, 1967).

Perennial yield for the Washoe Valley groundwater basin was calculated to be 9,300 acre-feet per year (AFA), and permitted and certificated rights total 10,474 AFA (RWPC and WCDWR, 2005). Because of the demand for groundwater in Washoe Valley, the NDWR designated the Washoe Valley basin in 1978. RWPC and WCDWR (2005) estimated ground-water pumping to be 4,900 AFA in 2001, so the perennial yield appears sufficient to satisfy current demands. Also, Washoe County (2007) instituted a policy that requires "…the use of certificated water rights in an amount necessary to serve all new development in the Washoe Valley Hydrographic Basin." This policy will help ensure the perennial yield is sufficient for future groundwater demands.

Groundwater is shallow on Winters Ranch. In a generalized map of ground-water depth, Rush (1967) shows it ranging from less than five feet below ground level on the east side of the property to approximately 15 feet on the west side. Thiel Engineering Consultants (2004) noted

that two wells were constructed for Permits 66232, 66233, 69433, 69570, and 69731 prior to the BLM acquisition of the property. One well is on the East Casey parcel and the other is west of U.S. 395. Both wells had artesian flow and would have sufficient production to meet the duty associated with the permits. Both wells have 100-foot surface seals and are capped.

Groundwater Quality

Groundwater quality data for Winters Ranch are limited. Washoe County (2008c), however, prepares regular water quality reports for Washoe Valley. The County tested Well #1 in the Old Washoe Estates, which is located about 1,500 feet north of Winters Ranch. Iron, manganese, and color exceeded the maximum contaminant levels (MCLs), but these constituents would not present any limitations for irrigation, wildlife watering, or other proposed uses on Winters Ranch.

Thiel Engineering Consultants (2002) also conducted soil and groundwater sampling on the Virginian property. The sampling was requested by the BLM due to concerns about the presence of mercury in soil samples from various sites on the Virginian property. Again, the iron, manganese, and color in groundwater exceeded the MCLs, but not to a level that would affect proposed uses on the property. Mercury was not detected in the groundwater, and the 0.00020 milligrams per kilogram measured in the soil samples was far below the MCL of 233 parts per million for mercury in soils used for recreation use.

Environmental Consequences

Surface Water

Surface Water Supply

Implementing the Proposed Action would generally enhance water supplies on Winters Ranch though the expected benefit would be small. The most significant action would be ensuring that unauthorized diversions from Ophir, Davis, and Winters creeks are not occurring in the upper watershed. This would maximize the runoff volumes that are available to benefit resources on the property.

In addition, certain actions would enhance the water available to achieve the resource objectives outlined in this plan, particularly those related to instream flows. For example, ceasing diversions to irrigate pasture and using supplemental ground-water rights to augment streamflows during dry periods would enhance instream flows that would benefit aquatic and riparian habitats.

If the No Action alternative were selected, the water supply would not be used strategically to achieve the objectives in the plan. A greater amount of water would be lost to evaporation since it would spread to abandoned irrigation ditches and open pasture. Some incidental benefits to wildlife habitats would result, but they would be minimal.

The cumulative effect of implementing the Proposed Action would be to enhance the surface water supply. In the past, surface water rights were used to irrigate harvest crops and diversified

pasture, which are consumptive uses with annual duties of 4.5 acre-feet per acre and 3.5 acre-feet per acre, respectively. Under the Proposed Action, crops and large pastures would no longer be irrigated, although the plan would allow for some irrigation if monitoring indicates it would benefit resources on the property. Instream flow is a key use of surface water recommended under the Proposed Action, and would enhance riparian and wetland plant communities. Riparian and wetland areas can also have high water consumption rates, but they would not be as extensive as the formerly irrigated pastures, so the total amount of surface water consumed is expected to be less. Excess surface water would eventually reach Scripps WMA where it would enhance open water and wetland habitats. Some water would reach Steamboat Creek, and then would become available to downstream users with water rights on the system.

Cumulative effects under the No Action alternative would probably be similar to the effects under the Proposed Action, but would be less certain. Because no specific plans are proposed under the No Action alternative, other uses, including consumptive uses, could be considered.

Surface Water Quality

Implementing the Proposed Action would improve surface water quality overall on Winters Ranch and in Washoe Lake. Establishing healthier, more extensive wetland and riparian communities would capture sediment and provide shade. Dissolved oxygen levels in the streams would be increased and total phosphorous related to sediments would be decreased, providing secondary benefits to aquatic organisms.

The proposed fuel break at the northern end of the property is the only specific project in the plan with the potential to impact water quality. Because of possible soil disturbance and erosion, direct impacts to Browns Creek and indirect impacts to Washoe Lake would be possible. The effects are expected to be negligible, however, because cut vegetation would be left scattered onsite and the BMPs in Appendix C would be implemented as part of the project design.

Other management actions suggested in the plan, such as removing portions of the railroad grade, would have potential water quality impacts. Environmental impacts would be analyzed when a specific project is proposed.

Under the No Action alternative some incidental water quality benefits would be realized because stream channels are becoming stabilized and some natural recruitment of riparian plants is already occurring. The benefits would be less than under the Proposed Action, however, because no specific actions would be aimed at this type of improvement. Improvements in water quality could also be undermined if land uses that could adversely affect the streams and riparian communities were authorized without guidance from a comprehensive management plan.

The water quality benefits described above would be realized into the future, so the cumulative effect of the Proposed Action would be to improve water quality in the long term. The natural recruitment of wetland and riparian plants that would be expected under the No Action alternative would also provide some cumulative benefits to water quality. Authorizing actions under the No Action alternative, however, could have direct or indirect water quality impacts and reduce the cumulative benefit.

Groundwater

Groundwater Supply

The groundwater supply would benefit if the Proposed Action were implemented. As noted by Arteaga and Nichols (1984), a high proportion of groundwater recharge occurs as streamflow infiltrates alluvial deposits on the valley floor. Although groundwater pumping could occur up to the limits of the underground water rights acquired by the BLM, proposed increases of instream flows on the property would result in higher rates of groundwater recharge.

Management under the Proposed Action would also help Washoe County meet its goals for watershed protection and groundwater recharge. Specifically, Policy SV.26.2 in the *South Valleys Area Plan* states that "natural groundwater recharge areas will be protected from development when possible" (Washoe County, 2008a).

Under the No Action alternative, the groundwater supply would not be significantly affected. Specific plans for using underground water rights would not be implemented, but eventually the BLM would have to dispose of the rights or use them. Recharge from infiltrating streamflow would still occur, though not to the degree that would be expected under the Proposed Action because the Proposed Action was designed to optimize instream flows.

Implementing the Proposed Action would provide cumulative benefits to the groundwater supply by enhancing recharge over the long term. The No Action alternative would not have a significant cumulative effect on groundwater supplies.

Groundwater Quality

No significant short-term or cumulative impacts to groundwater quality would be expected under the Proposed Action or No Action alternative. It is possible that future projects could affect groundwater, but environmental effects would be analyzed when a specific project is proposed.

c. Floodplains

Affected Environment

Map 4 shows 100-year floodplains as delineated on flood insurance rate maps prepared by the Federal Emergency Management Agency (FEMA, 1994 and 2001). It also shows the area inundated during the 1997 New Year's flood (Rigby et al., 1997). The FEMA data show that Ophir Creek would overtop its banks, and some of the east border adjoining Scripps WMA would be inundated during a 100-year flood. The effects that local highways have on the regional drainage pattern are also obvious from the FEMA data. U.S. 395 impedes flow on Browns and Ophir creeks, and ponding behind S.R. 429 (Old U.S. 395) would occur from the Winters Creek culvert south past the Davis Creek culvert.

The 100-year floodplains in the vicinity of Winters Ranch are designated as Zone A on FEMA maps meaning that detailed analyses were not performed to determine these areas. Observations of actual events, including the 1997 flood, suggest that larger areas of Winters Ranch would be

inundated during severe floods. This is particularly true along Ophir and Winters creeks, behind the V&T Railroad grade, and on the east side of the property. Also, portions of Washoe City along Browns Creek were flooded during a severe storm on New Year's Eve, 2005 (pers. comm. Woodside, 2006).

Flooding of Ophir Creek can be unusual because of landslides from Slide Mountain. Historic floods associated with landslides occurred on Ophir Creek in 1890 and 1983. The peak discharge of the 1983 flood surge was about 50,000 cubic feet per second (cfs) of water and debris at the mouth of the lower canyon (Glancy and Bell, 2000). This was 64 percent greater than the peak discharge of 30,500 cfs on the Carson River at Carson City during the 1997 flood (Rigby et al., 1998). Of course, the characters of the two events were different. The 1997 flood was a regional rain-on-snow event, whereas the Ophir Creek flood was a highly localized flood induced by the slide. According to Glancy and Bell (2000), debris from the landslide and flood of 1983 was small compared to at least nine prehistoric events, and future landslides are almost certain to occur.

Environmental Consequences

Implementing the plan under the Proposed Action would not significantly affect regional flooding. It would not affect upstream conditions, which are largely controlled by the amount and timing of runoff, and the drainage structures provided along the highways. Because Winters Ranch is immediately above Washoe Lake, downstream flood effects would be negligible.

On the other hand, the plan is intended to increase flooding frequency on the Winters Ranch property. Rosgen (1996) points out that flows corresponding to bankfull stage (the flow at which banks just begin to be overtopped) are the most effective for channel maintenance. Over time these low-magnitude, high-frequency floods move most of the sediment in a stream, depositing nutrient-rich soil on the banks, and providing a greater diversity of instream habitats. Implementing the actions of the plan would increase the number of these smaller floods, thereby enhancing streamside vegetation, stabilizing channels, providing diverse aquatic habitats, and improving water quality in the streams and in Washoe Lake.

Managing Winters Ranch under the No Action alternative would not present any greater risk of flood damage upstream or downstream of the property. Fewer resource benefits by smaller floods would result, however, and the risk of resource damage on Winters Ranch would be greater because less emphasis would be placed on restoring healthy riparian communities.

Because of the factors discussed above, cumulative effects to regional floodplains would be insignificant under either the Proposed Action or the No Action alternative. Cumulative benefits would be provided for floodplains along the streams on Winters Ranch, which would improve over time and provide secondary benefits to the plant communities, wildlife habitats, and water quality.

Insert Map 4 here.

d. Wetlands and Riparian Zones

Affected Environment

The current condition of riparian and wetland areas on Winters Ranch are the result of past land uses, and changes to the hydrologic regime and natural drainage patterns. For decades prior to the BLM acquisition, Winters Ranch was run as a livestock grazing operation, so much of the property was managed as irrigated pasture to maximize forage production. Chronic disturbance by livestock favored early-seral plant species, resulting in a loss of plant diversity and structure, and increased susceptibility to noxious weed infestations. The poor conditions of the riparian plant communities along the streams, as shown in Figure 1, reduce their ability to dissipate the energy associated with high flows, limit their ability to trap sediment, and diminish the value of aquatic habitat due to the lack of shade, cover, and organic matter that benefit many aquatic species.

The potential for riparian areas and wetlands on Winters Ranch is now limited somewhat because of changes in the hydrologic regime and natural drainage patterns. The total runoff reaching the property is less than under natural conditions because of upstream diversions, and periods of flow can be reduced to the point that the streams dry up during the summer and fall. In addition to increasing periods of zero flow, upstream diversions tend to reduce the frequency and magnitude of flood peaks. Low-magnitude floods provide many benefits to stream and riparian health, so reducing flood frequency can impair these systems.

Under natural conditions, flood waters would reach Winters Ranch on the valley floor and spread out, depositing nutrient-rich sediments and dispersing the seed of riparian plants. The elevated roadbeds along S.R. 429 and U.S. 395, however, force streamflows through culverts and back up flood waters as shown on Map 4. In the past, irrigating pasture redistributed water around the property, draining areas that normally would have been moist throughout the year and watering areas that would have remained relatively dry. This created extensive but artificially uniform pasture, resulting in poor plant diversity, composition, and structure.

Some positive riparian changes have occurred since the BLM acquired Winters Ranch as shown in Figure 2. The property has been rested from livestock grazing, and diversions for irrigation have only been minor. Regeneration of native willow (*Salix* sp.) and cottonwood (*Populus* sp.) is now occurring along the east boundary of the property and along Ophir Creek.

Environmental Consequences

To consider the effects of the Proposed Action on riparian areas, a distinction must be made between a site's capability and its potential. Prichard et al. (1998 and 1999) define the capability of a riparian or wetland area as the highest ecological status it can attain given its political, social, or economic constraints. The potential is defined as the highest ecological status that would be possible without those constraints. Because of upstream diversions and the impediments to streamflow created by the highways, the riparian and wetland areas on Winters Ranch will probably never achieve the natural potential they had before these constraints existed. Therefore, the *Winters Ranch Management Plan* is intended to achieve the site's capability rather than returning it to its past potential.

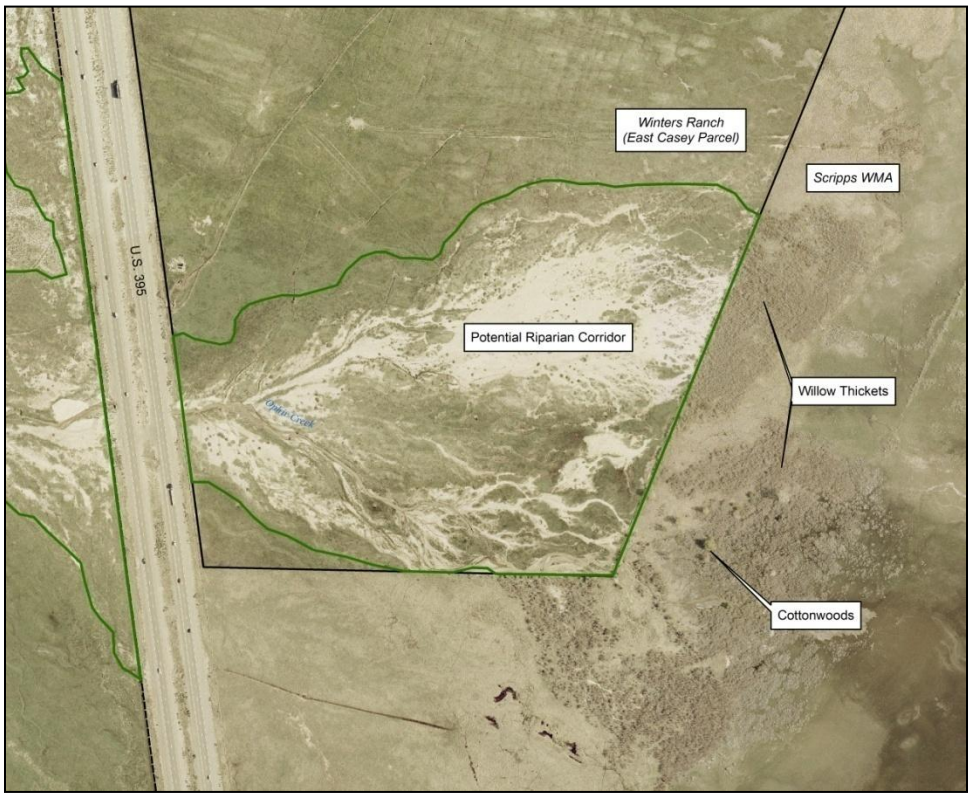

Figure 1. Aerial view contrasting the degraded condition of Ophir Creek at the southern end of Winters Ranch, to the healthy riparian community on the Scripps Wildlife Management Area. The delta at the lower end of Ophir Creek has tremendous potential for recovery.

Figure 2. Young willows and cottonwoods becoming established along Ophir Creek on Winters Ranch. Mature willows and cottonwoods on the Scripps Wildlife Management Area can be seen at the upper right of the photograph.

Two of the key objectives of the Proposed Action are to reestablish a more natural hydrologic regime, and to restore and maintain the riparian communities to their full capability. A number of the proposed management actions aimed at meeting these objectives would directly enhance riparian and wetland areas, including: (1) enhancing instream flows by ceasing diversions for irrigation and ensuring that only legitimate upstream diversions take place, (2) augmenting streamflow with supplemental groundwater, (3) planting native riparian species where natural regeneration does not occur, (4) conducting vegetation treatments to improve riparian communities or to control weed infestations, and (5) completing erosion control projects. The plant communities expected to become established along the riparian corridors are similar to those on Scripps WMA adjacent to Winters Ranch. A typical plant community is shown in Figure 3.

Figure 3. View of the riparian plant community on Scripps Wildlife Management Area as shown in Figure 1 and in the background of Figure 2. This typifies the vegetation expected to become established along Ophir Creek and the other riparian corridors on Winters Ranch.

Some wetland areas on the property have probably developed because they received more water from irrigation practices than they would have naturally. These areas would likely become drier under the Proposed Action, and the vegetation could change from obligate and facultative wetland species to facultative upland or even upland species. This decline in some wetland habitats, however, should be more than offset by enhancements to other areas that would receive greater moisture under the Proposed Action. The enhanced plant communities would also provide secondary benefits, such as improved wildlife habitat and water quality.

Under the No Action alternative, some of the same benefits would occur, but not to the same degree as under the Proposed Action. Chronic disturbance to riparian and wetland areas from livestock grazing and pasture irrigation would not occur, and some natural regeneration of riparian plant species would continue, but the management actions listed above that are designed

to benefit riparian and wetland areas would not take place. No improvements to riparian and wetland areas would be realized as a result of those actions.

Implementing the Proposed Action would provide cumulative benefits to wetlands and riparian areas on Winters Ranch. The management strategy put forth in the plan is primarily focused on improving these areas, and adaptive management principles would be used to adjust management actions to ensure that sufficient progress is made. As shown in Figure 2, some cumulative benefit to riparian areas would continue to occur under the No Action alternative. This improvement, however, would be limited to what can occur naturally without specific management actions aimed at the health of riparian communities.

e. Vegetation

Affected Environment

Map 5 and Table 6 show that the vegetation currently found on the vast majority of Winters Ranch can be broadly classified into two groups: meadow and shrubland. To a much lesser extent, seasonally inundated wetland areas and riparian wooded areas are also present. The plant species assemblages somewhat resemble the vegetation that existed before the extensive modification of the area by decades of domestic livestock grazing practices. Changes to the landscape have altered the dynamic natural processes, which in turn have altered species abundance, composition, and structure, and facilitated the invasion of nonnative plant species.

Table 6. Summary of the Major Cover Types Found on Winters Ranch.

Cover Type	Acres
Meadow	653
Shrubland	309
Landslide Deposits	29
Total	**991**

The shrubland overstory is dominated by rabbitbrush (*Chrysothamnus viscidiflorus*) and sagebrush (*Artemisia tridentata*). A variety of native forb and grass species are found in the understory, such as potentilla (*Potentilla* sp.), clover (*Trifolium* sp.), locoweed (*Astragalus* sp.), penstemon (*Penstemon* sp.), yarrow (*Achillea* sp.), dock (*Rumex* sp.), yampa (*Perideridia* sp.), lotus (*Lotus* sp.), wild iris (*Iris missouriensis*), juncus (*Juncus* sp.), bluegrass (*Poa* sp.), and squirreltail (*Elymus elymoides*). Nonnative species present in the understory include stork's bill (*Erodium cicutarium*), tansy mustard (*Descurainia sophia*), mullein (*Verbascum* sp.), bull thistle (*Cirsium vulgare*), musk thistle (*Carduus nutans*), perennial pepperweed (*Lepidium latifolium*), hoary cress (*Cardaria draba*), spotted knapweed (*Centaurea stoebe*), diffuse knapweed (*Centaurea diffusa*), bulbous bluegrass (*Poa bulbosa*), and cheatgrass (*Bromus tectorum*).

Insert Map 5 here.

Meadow areas are mostly dry with a few riparian areas along the banks of Winters, Davis, and Ophir creeks. The native meadow species are the same as those in the shrub understory with the following additions: navarretia (*Navarretia* sp.) and evening primrose (*Camissonia* sp.). Riparian areas have willows (*Salix* sp.) and fireweed (*Epilobium* sp.), and cottonwood (*Populus* sp.) saplings are growing along Ophir Creek.

The prevalence of wild iris, juncus, and nonnative weeds throughout the meadows indicate past overgrazing. The Virginian and East Casey parcels have been rested from grazing since they were acquired in 2002 and 2005, respectively. Vegetative ground cover is increasing, and several species of desirable grasses are becoming more widespread. Rest from grazing has also allowed the willows and cottonwoods found along the streams to become reestablished.

Environmental Consequences

The Proposed Action would drastically change the management of the area from a landscape modified by irrigation and livestock grazing to a more natural landscape where human influences give way to natural processes. A number of management actions listed in the plan would improve the plant communities on Winters Ranch. These include (1) promoting the recruitment of desirable native species, (2) implementing vegetation treatments to help achieve plant community objectives, and (3) controlling infestations of weeds.

With the focus on natural water flow patterns, the vegetation would undergo significant changes in certain areas. Vegetation near naturally flowing water would initially trend toward diverse, early-seral, mesic vegetation typically found in riparian areas and meadows. Vegetation that had been irrigated in the past, but is farther from naturally flowing water, would initially trend toward early- to mid-seral xeric species typically found in upland shrub areas. Relying on natural flow patterns rather than irrigation would convert the continuous grazing pasture into a mosaic of shrubs, meadows, riparian corridors, and seasonally inundated wetlands. Their spatial arrangement would depend on their proximity to water flow patterns.

The change in water flow patterns could create dry areas that would be vulnerable to native and nonnative invasive plants. Changes in irrigation and weed management practices, however, would gradually benefit desirable wetland plant species because of increased water availability in these habitats.

The 100-foot wide fuel break is a specific management action identified for implementation under the Proposed Action. It would be constructed along the northern property boundary adjacent to Washoe City, directly affecting roughly 15 acres by modifying the structure and amount of vegetation within the project area. Though 15 acres would be included, the net effect to the entire plant community on Winters Ranch would be relatively minor. The project is along an exterior boundary adjacent to residential lots where the vegetation has been extensively altered from a natural condition.

Under the No Action alternative, plant communities would continue to improve to some degree as natural recruitment of desirable species progresses. Some projects, such as noxious weed treatments, would still take place if the plan were not adopted. On the other hand, management

actions in the plan that are designed to help achieve plant community objectives would not be implemented under the No Action alternative.

Because the management emphasis of the plan is to improve vegetation characteristics on Winters Ranch, the Proposed Action would provide cumulative benefits to the plant communities. Adaptive management principles would also help ensure that progress toward the goals and objectives is made. Some cumulative benefits would also occur under the No Action alternative. For example, many areas that were bare soil when the BLM acquired the property are now vegetated with grasses and forbs. This improvement, however, would be limited to what can occur naturally without specific management actions aimed at vegetation enhancement.

f. Invasive, Nonnative Species

Affected Environment

For decades prior to the BLM acquisition of Winters Ranch, streams and groundwater sources had been used to irrigate the property to support domestic livestock grazing. The ongoing disturbance resulted in conditions on Winters Ranch that are conducive to invasion by several species of noxious weeds. In addition to livestock, a variety of mechanisms contribute to weed transport to and from the property. U.S. 395 on the western edge of Winters Ranch is known to have noxious weeds along the right-of-way, and weeds migrate from the highway margins on to Winters Ranch. Streams entering from the west also transport weeds on to the property and provide a source of water for the germination and establishment of weed species.

Noxious weed surveys were initiated in 2004 with several follow-up surveys between 2005 and 2010. The surveys conducted in 2004 and 2005 reported occurrences of bull thistle (*Cirsium vulgare*), Canada thistle (*Cirsium arvense*), musk thistle (*Carduus nutans*), Russian knapweed (*Centaurea repens*), spotted knapweed (*Centaurea stoebe*), diffuse knapweed (*Centaurea diffusa*), hoary cress (*Cardaria draba*), and perennial pepperweed (*Lepidium latifolium*). The 2007survey was more systematic than earlier surveys and revealed far greater numbers of noxious weeds than were previously known. The 2007 survey utilized spaced transects which allowed greater precision in locating weeds, but also required a greater amount of time. Consequently, approximately 25 percent of the acreage was surveyed in 2007. Further surveys are planned for 2011 and beyond.

Weed management efforts can be difficult due to potential invasions from adjacent lands. Fortunately, the BLM has a number of weed management partners in the area. The Washoe-Pleasant Valley Cooperative Weed Management Area (WPVCWMA), Scripps WMA, Washoe County, Nevada Department of Transportation, and local homeowners are actively surveying and treating noxious weeds on state, county, and private lands in the vicinity of Winters Ranch. These groups recognize the threat of noxious weed invasions and the importance of working together to reduce and eliminate noxious weeds. The Carson City District Office has provided funding to the WPVCWMA to assist this group with their noxious weed abatement program.

Environmental Consequences

The overall management strategy in the Proposed Action would change the area from a landscape modified by decades of irrigation and livestock grazing to a more natural landscape where human influences give way to natural processes. By promoting more natural water flow patterns, the vegetation will undergo significant changes in certain areas. Vegetation near water sources will trend initially toward diverse, early-seral mesic vegetation typically found in riparian areas and meadows. Vegetation further away from water sources will initially trend towards early-seral to mid-seral xeric species typically found in upland shrub areas.

Discontinuing past irrigation practices would convert the relatively continuous grazing pasture bordered by shrublands to the north and wetlands to the east, into a mosaic of shrubs, meadows, riparian corridors, and seasonally inundated wetlands that are spatially arranged based on their proximity to naturally flowing water. The change in water flow patterns could create dry areas that would be vulnerable to invasive native and nonnative plants. Gradual changes in vegetation communities brought about by new irrigation and weed management practices would help prevent the establishment of invasive species, and would facilitate control of populations that are found. Management under the Proposed Action would maintain favorable conditions, allowing more facultative and xeric native species to establish at these particular sites.

A key management action in the plan is to prevent or control infestations of noxious weeds in accordance with the *BLM Carson City Field Office Noxious Weed Treatment Plan* (BLM, 2008a). Including weed management in the plan would give special emphasis to weed control on Winters Ranch. Yearly noxious weed surveys would be conducted on Winters Ranch to identify areas for weed treatment and to provide information on the success of previous treatments. The BLM (2008a and 2007a) would follow weed treatment protocols outlined in the local weed treatment plan and in the programmatic environmental impact statement titled *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States*.

Under the No Action alternative, some of the same plant community improvements would occur, but not to the same degree as under the Proposed Action. Chronic disturbance from livestock grazing and pasture irrigation would no longer occur, but neither would many of the management actions designed to benefit plant communities. Noxious weeds would be monitored and treated with the same level of management given to other public lands managed by the BLM.

Implementing the Proposed Action would provide a cumulative net benefit for control of invasive species. Managing invasive plants requires cooperation between various landowners in a region, so that populations cannot spread from one property to another. The partnerships already in place would provide a foundation for cooperative weed management. Similar cooperative efforts would take place under the No Action alternative, but weed problems on Winters Ranch would not receive any more attention than other public lands.

g. Wildlife and Fisheries

Affected Environment

General Wildlife and Fisheries

The Winters Ranch property has a variety of habitat types that include streams, riparian, wet meadow, meadow, and shrubland dominated by rabbitbrush and sagebrush. Additional descriptions of these habitats can be found in the following affected environment sections: (b) Water Resources, (c) Floodplains, (d) Wetlands and Riparian Zones, and (e) Vegetation. Past overgrazing by livestock profoundly affected the vegetation on the property, and therefore also affected wildlife habitats and the species using them. At the time of acquisition, willows and cottonwoods were absent from riparian areas and wild iris, juncus, and nonnative weeds were prevalent in the meadows.

Stream Habitats

Four streams originate in the Carson Range, and flow to the east across Winters Ranch. North to south they are Browns, Winters, Davis, and Ophir creeks. All are intermittent or ephemeral, typically drying up during late summer or early fall. Ophir Creek has the highest sustained flow, but all the streams are affected by upstream diversions and obstructions to flow.

Because the streams dry up late in the year, none of them currently provide year-round aquatic habitat. Ophir Creek has the best potential for providing perennial aquatic and fisheries habitat. Fish and other aquatic animals occupy the streams when they are flowing. During periods of sustained flow, the creeks temporarily support introduced native rainbow trout (*Oncorhynchus mykiss*), non-native brook trout (*Salvelinus fontinalis*), non-native bullfrogs (*Rana catesbeiana*), and possibly native tui chub (*Gila bicolor*) and Paiute sculpin (*Cottus beldingi*). The Nevada Department of Wildlife manages nearby Washoe Lake for a sport fishery with non-native smallmouth bass (*Micropterus dolomieu*) and channel catfish (*Ictalurus punctatus*), which may move up into the creeks during periods of higher flows. These fish would prey on any smaller native fish if present. Fish either perish or move upstream when the creeks go dry, and they follow the water back downstream or move in from Washoe Lake when the creeks flow again. In addition to the fisheries, the creeks on Winters Ranch also support native amphibians, and a variety of waterfowl and wading birds use them when water is present (see Appendix D-1).

Riparian Habitats

Potential riparian areas exist along the four creeks that occur on the Winters Ranch property. In the past, heavy cattle grazing kept riparian vegetation from developing. Since the elimination of livestock grazing, riparian plant species, such as willows and cottonwoods, are quickly becoming reestablished, particularly along Ophir Creek and Winters Creek.

It will take years for riparian woodland to develop, but in the meantime, the developing willows and cottonwoods likely provide perches and nesting structure for songbirds. Appendix D-1 shows wildlife species associated with this riparian habitat.

Wet Meadow/Meadow Habitats

Roughly two thirds of the Winters Ranch property is comprised of sub-irrigated and seasonally inundated meadows. The extent of the wet meadow cover type is greater than it would be naturally because of the extensive irrigation that occurred in the past. For this reason and because the entire area was heavily grazed for decades, most of the wet meadow cover type is in an unhealthy condition. A large portion of the area is now dominated by juncus, which has formed a near monoculture. Since the BLM acquisition of the property, irrigation and grazing have ceased. The formerly irrigated portions of the meadow habitat do not receive as much moisture, but a dense mat of decadent juncus remains. With the elimination of livestock grazing, some areas are responding with improved vegetative diversity, but a variety of noxious weeds have also invaded the area. Floodplain areas will retain wet meadow characteristics, particularly along stream channels and in natural depressions where ephemeral ponds form.

Areas of sedges and native grasses in the meadows provide limited but important foraging and nesting areas for a variety of wildlife species (see Appendix D-1). Pacific tree frogs (*Pseudacris regilla)*, western toads (*Bufo boreas*), garter snakes (*Thamnophis sp*) and a variety of invertebrates likely occur in the wet meadow areas including the juncus monoculture, however, their abundance would be less than in the sedge co-dominated communities. The thick mats of juncus are of low palatability and are difficult for most wildlife species to use. The healthier wet meadow areas that contain sedges and native grasses provide foraging habitat for a host of bird species including egrets, herons, white-face ibis (*Plegadis chihi),* and various waterfowl (Appendix D-1).

The proximity of Winters Ranch to the Scripps Wildlife Management Area (WMA) and Washoe Lake greatly influences the use of the property by wetland and water associated birds. The Scripps WMA supports hundreds of nesting great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), great egret (*Ardea alba*), black- crowned night heron (*Nycticorax nycticorax*), and white-faced ibis (McIvor, 2005). Many of these birds will forage in the wet meadows on the Winters Ranch property when conditions are favorable. Most of the foraging activity occurs on areas where sedges and native grass still occur, with juncus dominated areas providing few foraging opportunities.

The property has a fairly high diversity of avian species because of the wet meadow plant community, creeks, and proximity to Washoe Lake, but the numbers are likely low because of degraded conditions. Some waterfowl may nest in the thick sedges and grasses and move their broods to the marshy areas of Washoe Lake or utilize seasonal small pools within the wet meadow area. The limited ephemeral ponds are naturally attractive to waterfowl, wading birds, shore birds, and a variety of amphibians (Appendix D-1). In the drier meadow areas, savannah sparrows (*Passerculus sandwichensis*) and western meadowlarks (*Sturnella neglecta*) are common. Montane voles (*Microtus montanus*) and vagrant shrews (*Sorex vagrans*) are also common (Appendix D-1).

Shrubland Habitats

Roughly one third of the Winters Ranch property is rabbitbrush and sagebrush-dominated shrubland. More of the property would likely be shrubland if it had not been irrigated in the past.

Past livestock grazing depleted the more palatable species such as winterfat, bluebunch wheatgrass, bluegrass, Idaho fescue, and Indian ricegrass. Past disturbance has also resulted in conditions conducive to invasions by noxious weeds.

Despite a reduced amount of native bunchgrasses and the presence of weeds, the shrubland cover type provides habitat for a variety of wildlife species (see Appendix D-1). California quail (*Callipepla californica*), horned lark (*Eremophila alpestris*), spotted towhee (*Pipilo erythrophthalmus*), western meadowlark, black-tailed jackrabbit (*Lepus californicus*), deer mouse (*Peromyscus maniculatus*), northern sagebrush lizard (*Sceloporus graciosus graciosus*), and western fence lizard (*Sceloporus occidentalis*) are all fairly common. Overall diversity and density of small mammals, reptiles, and amphibians, however, appears to be low across the property and less than expected for this habitat type. This may be due to seasonal flooding, degraded habitat conditions, and the relative isolation of the property. On the north end of the property, domestic and feral cats associated with the adjacent residential area may also be affecting the abundance of small mammals, reptiles, and amphibians.

A few mule deer (*Odocoileus hemionus*) may occasionally use the property, but no pronghorn (*Antilocapra americana*) or bighorn sheep (*Ovis canadensis*) are found in the area. Black bear (*Ursus americanus*) probably move through the area occasionally. Coyote (*Canis latrans*) sign and sightings are common, and desert cottontails (*Sylvilagus audubonii*), jackrabbits, and muskrat (*Ondatra zibethicus*) are also present. A considerable amount of montane vole activity was observed by BLM personnel on September 23, 2009 in the vicinity of a water standpipe in the southern part of the property. Two species of lizard and one species of rattlesnake have been found in the dry sagebrush habitats (Hill and Baker, 2007), but additional species of lizards and snakes would be expected to occur. Their absence may be due to factors previously mentioned. The property provides foraging habitat for several species of raptors such as the northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*).

The Winters Ranch property is a relatively isolated parcel of land. To the west, it is essentially separated by U.S. 395. Three large box culverts and more than 20 small culverts connect Winters Ranch to the west side of the highway. The north end of the property is bounded by Washoe City, and the east and south ends border the Scripps WMA. Washoe Lake occasionally backs up to the eastern border of Winters Ranch, and the area to the south is subject to seasonal inundation. Isolation of the property affects the ability of terrestrial wildlife species to move into and out of the area. Only terrestrial species that can quickly colonize and reproduce appear to be present in substantial numbers (Hill and Baker, 2007).

BLM Sensitive Species (Animals)

BLM Manual 6840 establishes policy for the management of BLM Sensitive Species and their habitat (BLM, 2008c). All federally designated candidate species, proposed species, and delisted species in the five years following their delisting shall be conserved as Bureau Sensitive Species. The BLM undertakes conservation actions for such species before listing is warranted. A list of sensitive animal and plant species associated with BLM lands in Nevada was signed in 2003 (BLM, 2003). BLM Sensitive Species that occur or may occur on Winters Ranch are listed in Appendix D-2.

Species designated as Bureau sensitive must be native species found on BLM-administered lands for which the BLM has the capability to significantly affect the conservation status of the species through management, and either:

1. There is information that a species has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species range; or

2. The species depends on ecological refugia or specialized or unique habitats on BLM-administered lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk.

Amphibians

The northern leopard frog (*Rana pipiens*) is the only BLM Nevada sensitive amphibian species that may occur on Winters Ranch in association with stream and wet meadow habitats (Wildlife Action Plan Team, 2006), but none have been observed. Habitat conditions are not favorable for the frog because most of the property dries up in the late summer and fall.

Birds

The short-eared owl (*Asio flammeus*) and the vesper sparrow (*Pooecetes gramineus*) are the only BLM Nevada sensitive bird species that have been observed on Winters Ranch. Eidel (2006) recorded two sightings of vesper sparrows in sagebrush and wet meadow habitats during June 2006, and Hill and Baker (2007) observed short-eared owls in July, 2007. Thirteen other birds on the list may also occur on Winters Ranch.

Various birds of prey likely use the area for foraging. For example, northern goshawks (*Accipiter gentilis*) and long-eared owls (*Asio otus*) are generally associated with coniferous forests but may occasionally use the property for foraging because of the proximity of forest to the west of the property. The short-eared owl is often associated with marshy areas, grassy plains, river valleys, and meadows. It is a ground nesting species that may nest on the property (Wildlife Action Plan Team, 2006). Also, nearby large trees provide potential nesting habitat for Swainson's (*Buteo swainsoni*) and ferruginous hawks (*Buteo regalis*) (Powell, 2010).

The black tern (*Chlidonias niger*) may occur on Winters Ranch during wet periods, but would more likely be associated with Washoe Lake because it requires marsh habitat and prefers close proximity to open water (Aversa et al., 2010). Least bitterns (*Ixobrychus exilis*) and sandhill cranes (*Grus canadensis*) may occasionally use the wet meadow areas for nesting and foraging. Of the passerine species, only the vesper sparrow was observed on Winters Ranch and it was seen in association with meadow and sagebrush habitats. Loggerhead shrikes (*Lanius ludovicianus*) may forage throughout the area, but they typically nest in shrubs or small trees. Consequently, they would most likely be associated with the developing riparian vegetation or the sagebrush shrubland on the property (Wildlife Action Plan Team, 2006). According to the Lahontan Audubon Society, a "…colony of Tricolored Blackbirds (*Agelaius tricolor*) breeds in the Carson Valley, the only known occurrence in Nevada." Tricolored blackbirds may nest and

forage in the area, but it is unlikely since the marsh conditions it prefers do not exist on Winters Ranch (NatureServe, 2009).

Mammals

Winters Ranch may provide foraging habitat for 14 sensitive bat species. No roosting habitat is found on Winters Ranch, but may exist for some species in nearby areas such as Washoe City.

Invertebrates

The California floater (*Anodonta californiensis*), a freshwater clam, used to be abundant in Washoe Lake until the lake dried up in 2004 (Wildlife Action Plan Team. 2006). Habitat typically consists of "[s]hallow areas, less than 2 m. deep in unpolluted lakes, reservoirs, and perennial streams…" (Arizona Game and Fish Department, 2001). Because no perennial streams or ponds exist on Winters Ranch, the California floater is not expected to occur.

Three butterflies, the Carson Valley silverspot (*Speyeria nokomis carsonensis*), Carson Valley wood nymph (*Cercyonis pegala carsonensis*), and Mono Valley checkerspot (*Euphydryas editha monoensis*), may occur on Winters Ranch. Based on known distributions, however, it is highly unlikely that any of these species occur at present. Populations of the Carson Valley silverspot and the Carson Valley wood nymph occur to the south in Douglas County and appear to exist in one particular boggy meadow (NatureServe, 2009; Bourelle, 2001). Conditions that are similar to the Douglas County meadow may exist in close proximity to Washoe Lake, but do not currently exist on Winters Ranch. The Mono Valley checkerspot currently occurs in Snyder Meadow along Clear Creek just southwest of Carson City. Habitats for the Mono Valley checkerspot may include pinyon-juniper woodlands, mountain meadows, and coniferous forests. It also appears to be closely associated with the plant blue-eyed Mary (*Collinsia parviflora*) (NatureServe. 2009). Given current vegetative conditions, it is unlikely that the Mono Valley checkerspot occurs on the property.

Migratory Birds

Migratory birds are protected under the *Migratory Bird Treaty Act of 1918* (MBTA), and Executive Order 13186 addresses the responsibilities of federal agencies to protect migratory birds by taking actions to implement the MBTA. BLM management of migratory bird species on the public lands is guided by Instruction Memorandum No. 2008-050 (BLM, 2007b). Based on this IM, migratory bird species of conservation concern include "Game Birds Below Desired Conditions" and "Species of Conservation Concern." The list of migratory bird species of concern that occur or may occur on Winters Ranch is shown in Appendix D-3.

Winters Ranch lies within the Intermountain West Avifaunal Biome, the center of distribution for numerous western birds (Rich et al., 2004). Over half of this biome's Species of Continental Importance have 75 percent or more of their population here. Many breeding species from this biome migrate to winter in central and western Mexico or in the Southwest Avifaunal Biome. Shrub-nesting species comprise the largest number of Species of Continental Importance in this biome. Winters Ranch is used by migratory birds associated with the coniferous forests of the Carson Range and by those drawn to the open water and marsh habitats provided by the Scripps

WMA. Winters Ranch lies within the Washoe Valley Important Bird Area (IBA) designated by the Audubon Society (McIvor, 2005). The IBA carries no legal protection or federal management mandates, but was designated after being evaluated against a set of standard criteria by a Technical Advisory Committee. The IBA description contains useful information about the birds using the area, local land uses, and conservation issues, and a Memorandum of Understanding between the BLM and the USFWS (2010) states that special designations such as IBAs that apply to all or part of the planning area will be considered during the planning process and in appropriate plan documents.

Game Birds Below Desired Conditions

Winters Ranch provides shrubland, grassland, and riparian habitats that support migratory bird species. Of the species on the list of "Game Birds Below Desired Conditions," the mourning dove (*Zenaida macroura*), ring-necked duck (*Aythya collaris*), mallard (*Anas platyrhynchos*), and northern pintail (*Anas acuta*) have been observed on Winters Ranch (Eidel, 2006). Canvasback (*Aythya valisineria*), wood duck (*Aix sponsa*), and band-tailed pigeons (*Columba fasciata*) may occur. Mourning doves are common in the area and would use drier sites for foraging, along with band-tailed pigeons. Nesting habitat exists nearby and the cottonwoods and willows along the creeks are reproducing and developing. While it will take years for riparian woodland to develop, young willows and cottonwoods likely provide nesting structure for songbirds. Waterfowl species would use the property during wet periods, which generally occur from early spring to mid-summer, for foraging and possible nesting.

Species of Conservation Concern

Of the bird species on the list of "Species of Conservation Concern," six species have been observed on Winters Ranch and 11 others may occur. Of these 17 species, eight are birds of prey. The northern harrier and short-eared owl have been observed on the property, and golden eagle (*Aquila chrysaetos*), peregrine falcon (*Falco peregrinus*), prairie falcon (*Falco mexicanus*), ferruginous hawk, Swainson's hawk, and northern goshawk may occur. All of these birds would use the property for foraging. The short-eared owl and northern harrier are ground nesters and could nest in or near the area. The property does not provide nesting habitat for the other species.

Wading or shorebirds observed on Winters Ranch include the American bittern (*Botaurus lentiginosus*), Wilson's phalarope (*Phalaropus tricolor*), and willet (*Tringa semipalmata*). All were observed during June and July 2006 (Eidel, 2006). American avocet (*Recurvirostra americana*) and long-billed curlew (*Numenius americanus*) may also occur. All would forage within the wet meadows on the property and could nest there as well.

Passerine species that could be associated with various habitats on Winters Ranch include the Brewer's sparrow (*Spizella breweri*), loggerhead shrike, and sage sparrow (*Amphispiza belli*). Of these, only Brewer's sparrow has been observed. Ediel (2006) recorded sightings in June and July 2006. These passerine species would primarily be associated with the shrubland for foraging and nesting (see habitat discussion in the General Wildlife and Fisheries section).

Environmental Consequences

General Wildlife and Fisheries

The Proposed Action would greatly benefit wildlife because some of the key aims of the plan are to improve and enhance the existing aquatic, riparian, wetland, and upland wildlife habitats on Winters Ranch. The Vision Statement and associated goals and management actions in the *Winters Ranch Management Plan* emphasize the maintenance and restoration of wildlife habitats on the property.

The Plan addresses restoration of the aquatic and riparian habitats along Ophir, Davis, and Winters creeks and their maintenance in a healthy, functioning condition. The elimination of livestock grazing is already having a positive impact by allowing cottonwoods and willows to become re-established. The Proposed Action would promote the natural recruitment of native riparian vegetation and allow for augmentation with planting if needed. Various vegetative treatments, such as prescribed fire and mechanical treatments could also be used to help speed the restoration process. In time, healthy riparian communities would develop and provide important habitat for a variety of birds and mammals including passerines, raptors, woodpeckers, rodents, bats, and mule deer. Mature, large trees could provide rookery habitat for herons and egrets.

While some of the management actions for aquatic and riparian habitat restoration would depend on the results of a complete hydrologic analysis, implementing the management plan would still improve stream function and flow regardless of analysis results. If necessary, direct channel treatments could be used to restore channel function and floodplain development. Stream diversions and ditches that were used to irrigate the pasture could also be eliminated to optimize stream flows and stream flows could be maintained throughout the dry season via augmentation with wells. These actions would benefit aquatic species and could provide for a sustainable fishery. Enhanced stream flow and function would also benefit the various waterfowl, and wading and shore birds associated with this area. In addition, eliminating bullfrogs would reduce predation on fish, amphibians, and reptiles.

The Proposed Action would restore wetland habitats on the Winters Ranch property, and maintain them in a healthy, functioning condition. Currently, much of the wet meadow and meadow areas are in an unhealthy condition. Past irrigation has caused an artificial expansion of wet meadow areas, which have become dominated by dense, decadent juncus. The plan addresses this problem in part by re-establishing a more natural hydrologic regime. It promotes recruitment of native wetland species and would allow planting native species if needed. It also provides for various vegetative treatments, such as prescribed fire and mechanical treatments to speed the restoration process. In addition, the old irrigation infrastructure could be eliminated to prevent excessive drainage, allowing areas that would naturally be wet to retain moisture longer, and areas that would naturally be drier to revert to dry meadow conditions.

Restoring meadows, particularly wet meadow areas to a more natural condition would dramatically improve habitat for a wide variety of species, including waterfowl, wading birds, shore birds, and amphibians. The meadows would provide better foraging habitat for a variety of passerines and raptors, and would become more attractive to herons and egrets. More natural

wetland and marsh conditions would also provide higher quality nesting habitat for ground nesting species.

Predator species ranging from garter snakes to coyotes would benefit from habitat restoration for small mammals such as montane voles, vagrant shrews, and cottontail rabbits. Areas that revert to a drier condition would become suitable habitat for species like the California quail, western meadowlark, horned lark, and savannah sparrow. Re-establishing a more natural hydrologic regime would also help perpetuate the ephemeral pools that form in the wetland areas and marsh areas would likely develop. Ephemeral pools and marshes are used by numerous waterfowl, wading birds, and shore birds, and are important breeding habitat for amphibians such as the western toad and Pacific tree frog.

The Proposed Action would restore upland habitats on the Winters Ranch property, and maintain them in a healthy, functioning condition. The shrubland component is likely smaller than it would be naturally because of past irrigation, and past grazing practices have resulted in an unhealthy vegetative condition. The shrubland community is noticeably deficient in several herbaceous species such as winterfat, bluebunch wheatgrass, bluegrass, needle-and-thread grass, Idaho fescue, Indian ricegrass, and globemallow. The condition of the shrubland has improved since the BLM acquired the property and removed livestock. The upland vegetation will likely expand somewhat over time because of the elimination of the irrigation system.

The management plan addresses upland improvement by promoting the natural regeneration of native vegetation with planting or seeding of native species if needed. It also proposes the use of vegetation treatments, such as mechanical treatments or short-term livestock grazing to help with the recovery process.

Implementing the Proposed Action and restoring the shrubland to a healthier condition would benefit an array of animals, including the California quail, western meadowlark, spotted towhee, desert cottontail, black-tailed jackrabbit, deer mouse, northern sagebrush lizard and western fence lizard.

Under the Proposed Action, noxious weeds would be controlled in all of the habitat types on Winters Ranch. The use of prescribed fire, mechanical treatments, or herbicides in any of the habitats could have short-term negative impacts on some individuals, but no long-term negative effects are expected. Highly mobile individuals would likely leave areas during treatment, but some less mobile individuals, such as amphibians, reptiles and small mammals could perish.

The 100-foot wide fuel break is a specific management action identified for implementation under the Proposed Action and it would be constructed along the northern parcel boundary adjacent to Washoe City. It would affect roughly 15 acres of vegetation. Minimal effects to wildlife species would be expected as a result of this project. A few ground-dwelling animals could potentially be killed, any nests and burrows would be destroyed, and individual birds could be affected in the short-term if activities occur during the nesting season. Impacts from fuel break construction would generally be related to disturbance and displacement of individuals from construction activities and associated noise. Displaced individuals could move into and use similar habitat that is abundant near the proposed fuel break. Best management practices would be implemented to protect soil and water resources, and treatment would be excluded from

sensitive riparian areas, wetlands, and drainages. If possible, construction of the fuel break would also be avoided from March 1 to August 1to protect nesting birds. Overall adverse impacts to individual animals would be minimal at the local level, but the project would not affect regional wildlife populations.

Overall, effects from the Proposed Action on general wildlife and fish species would be beneficial. Habitat improvement would likely increase the currently low diversity of small mammals, reptiles, and amphibians.

Under the No Action alternative, the *Winters Ranch Management Plan* would not be adopted. Specific actions to improve habitat conditions would not likely occur and some activities could be authorized that might be inconsistent with the proposed goals of the management plan. Overall, habitat conditions would likely improve slightly in time because noxious weed control and eradication would likely occur under this alternative, and some improvements in vegetative conditions throughout the area would be expected with the elimination of livestock grazing.

Some improvement, particularly in the riparian zones, is already occurring and would be expected to continue. Riparian areas would have the most notable improvement with the establishment and expansion of cottonwoods and willows. Shrubland habitat would continue to improve, but more slowly than under the Proposed Action. Any improvement in the wet and dry meadow areas would occur slowly and a more natural hydrologic regime may never be achieved.

Streams would remain seasonal and would only support aquatic species during periods of flow. There would be no opportunity for a sustained fishery. Use of the area by waterfowl, wading birds, and shore birds would be limited to seasonal flows and inundations as is currently the case. Without some direct treatment, the vegetative conditions may not change significantly for a long period of time.

There would be fewer benefits to wildlife under the No Action alternative than under the Proposed Action. For many species the situation would not change substantially from current conditions. The Proposed Action would provide cumulative benefits to wildlife because the Plan emphasizes management that improves habitat characteristics as discussed above. The cumulative impacts of the No Action alternative for all wildlife species and their habitats would either be slightly positive or insignificant.

BLM Sensitive Species (Animals)

The effects of the Proposed Action on the various habitat types are discussed above in the General Wildlife and Fisheries section. With improved hydrologic regimes and vegetative conditions for all habitat types, habitats for sensitive species that occur or may occur on Winters Ranch would improve. More reliable stream flows, wetland and marsh conditions, and ephemeral ponds would provide improved habitat for the northern leopard frog should it occur. Eliminating bullfrogs could also improve their survival.

Tricolored blackbirds may move into the area from the Carson Valley if marsh areas develop as anticipated. Foraging and possible nesting habitat would be provided or improved for black terns, least bitterns, sandhill cranes, and long-billed curlews should they occur. Raptors that use

or may use the area would benefit from improved vegetative conditions providing a greater prey base. Nesting habitat for short-eared owls would also be improved. Vegetative conditions would improve in the drier meadow and shrubland types that would enhance nesting and foraging conditions for the vesper sparrow. Trees maturing in the riparian zones could provide nesting and perching substrate for species such as loggerhead shrike, and ferruginous and Swainson's hawks.

Bats are the only mammals on the BLM Sensitive Species list that may occur in the area. Improved and more natural vegetative conditions throughout the area may result in more insects, thus improving foraging opportunities for bats.

None of the four invertebrates on the BLM Sensitive Species list (Appendix D-2) are likely to occur on Winters Ranch. If stream flows become perennial, however, suitable habitat for the California floater would exist. Improving hydrologic regimes and vegetative conditions throughout the area might also provide suitable habitat for the three butterfly species.

For the species discussed, any vegetative treatments could have a slight short-term negative effect. Treatments should be completed outside of nesting periods to avoid potential affects to ground nesting birds. Potential effects on individual animals are expected to be minimal. All of the bird species are highly mobile and any displacement should be short-term. Bats would not be affected.

Effects of the No Action alternative on the various habitat types are described in the General Wildlife and Fisheries section, and those effects on habitats are essentially the same for BLM Sensitive Species that occur or may occur on Winters Ranch. Perennial stream or wetland habitat would not be provided for the California floater. Marsh habitat would not develop and there would be no potential to attract tricolored blackbirds to the area. With the exception of the riparian areas and their associated cottonwoods and willows, most of the habitat on Winters Ranch would not likely change appreciably from existing conditions for many years. As trees mature in the riparian zones, they could provide nesting and perching structure for loggerhead shrikes and raptors, such as ferruginous and Swainson's hawks. If the various management actions proposed in the plan are not implemented, meadow and shrubland habitats would show little if any change or improvement from existing conditions. Therefore, minimal to no effect would be expected to BLM Sensitive Species associated with these habitat types.

Consequently, the No Action alternative would have a slight positive effect for those species that use riparian habitat, but for most species, the effect would be neutral compared to existing conditions. For all of the BLM Sensitive Species that occur or may occur on the property, this alternative would have little or no effect on regional populations.

Overall, the Proposed Action would benefit local and regional populations of BLM Sensitive Species, but benefits to regional populations are expected to be minimal and may not be readily discernable at such a large scale. In conjunction with past, present, and reasonably foreseeable actions, cumulative effects under the Proposed Action would be positive. Significant cumulative effects under the No Action alternative would not be expected.

Migratory Birds

The environmental effects of the Proposed Action on the various habitat types are discussed in the previous section on General Wildlife and Fisheries. Improving hydrologic regimes and vegetative conditions for all habitat types would improve habitat conditions for all migratory birds that occur on Winters Ranch. Habitat conditions for the various waterfowl, wading birds, and shore birds are expected to improve significantly.

Improved vegetative conditions are expected to enhance foraging conditions for raptors by providing a greater prey base. Ground nesting habitat for northern harriers would also improve. Improved vegetative conditions in the drier meadow areas and shrublands would benefit the Brewer's sparrow, sage sparrow, loggerhead shrike, mourning dove, and band-tailed pigeon. Tricolored blackbirds might move into the area as marshes form. As trees mature in the riparian zones, they could provide nesting and perching structure for loggerhead shrikes, mourning doves, band-tailed pigeons, and raptors such as ferruginous hawks, and Swainson's hawks. Wood ducks might use mature cottonwoods with cavities for nesting.

Effects of the No Action alternative on the various habitat types are described in the General Wildlife and Fisheries section, and those effects on habitat are essentially the same for migratory birds that occur or may occur on Winters Ranch. With the exception of the riparian areas and their associated cottonwoods and willows, most of the habitat on Winters Ranch would not likely change appreciably from existing conditions for many years.

Species most likely to benefit from the cottonwood and willow development would be loggerhead shrikes, mourning doves, and possibly band-tailed pigeons. Mature cottonwoods could provide nesting and perching structure for raptors, such as ferruginous and Swainson's hawks. If the various management actions proposed in the plan are not implemented, meadow and shrubland habitats would show little if any change from existing conditions. Marsh habitat would not develop and there would be no potential to attract tricolored blackbirds to the area. Therefore, minimal to no effect would be expected to migratory birds associated with these habitat types.

For all of the BLM Sensitive Species that occur or may occur on the property, this alternative would have little or no effect on regional populations. Significant cumulative effects would not be expected. Consequently, the No Action alternative would have a slight positive effect for those birds that use riparian habitat, but for most species, the effect would be neutral compared to existing conditions. For all migratory birds that occur or may occur on the property, this alternative would have little or no effect on regional populations.

Overall, this alternative would benefit local and regional populations of migratory birds, but benefits to regional populations are expected to be minimal and may not be readily discernable at such a broad scale. In conjunction with past, present, and reasonably foreseeable actions, cumulative effects under this alternative would be positive. Significant cumulative effects under the No Action alternative would not be expected.

h. Recreation

Affected Environment

Recreational use was identified as a principal value in the SNPLMA nomination for acquisition of the Winters Ranch property, as long as it is compatible with open space and other natural resource values. The property lies within the Sierra Front wildland-urban interface, which supports a regional population approaching one million, and is convenient to another 20 million potential visitors from northern California. In general, the Winters Ranch area is open and exposed, with virtually no naturally occurring features to provide shade in the hot summer months. Peak use would probably occur in the spring and fall, tapering off in the winter, and falling to its lowest levels in the summer.

Access to Winters Ranch is provided along U.S. 395, and at other paved roads within Washoe City. Formal public access to the interior of the property is available seasonally on the NDOW road easement to Scripps WMA. Winters Ranch is in an area designated as "limited to existing roads and trails" for the use of off-highway vehicles (OHVs) (BLM, 2001b). Other than the NDOW easement, no roads or trails subject to OHV use existed on the property at the time of the acquisition. An unknown number of casual use trails can also be found on the property.

Recreational opportunities would be planned in a regional context. Washoe State Park on the east side of Washoe Lake provides highly developed facilities for water and equestrian based recreation activities, as well as an interpretive trailhead and trails system. Bowers Mansion and Davis Creek County Parks are west of S.R. 429, providing parking, restrooms, picnic areas, trails, and other amenities, such as a swimming pool at Bowers Mansion and camping at Davis Creek County Park. Pedestrian access to Winters Ranch might be possible from Davis Creek County Park via an eight-foot box culvert beneath U.S. 395. Public lands east of Washoe Lake support OHV use and opportunities for dispersed and organized equestrian events.

Environmental Consequences

The Proposed Action would maintain a dispersed recreation niche on Winters Ranch, thereby contributing to the broad spectrum of recreation opportunities offered in Washoe Valley and the surrounding area. In the long term this alternative would benefit visitors to the property by enhancing the natural setting and providing for public health and safety. Minimal short-term impacts to the recreating public could occur during implementation of restoration projects, vegetation treatments, and possible future developments, but these projects would enhance visitors' experiences over the long term.

Under the No Action alternative, recreation use would be defined over time by visitors to the property. It is possible that unmanaged use under this alternative could negatively impact stream habitats, wetlands, and cultural resources. Some recreation activities, such as OHV use, might be accommodated under the No Action alternative, but would not likely be considered if the Proposed Action were adopted. A lack of guidance related to Special Recreation Permit proposals could promote recreation uses that are incompatible with the resource goals outlined in the plan, and eventually could contribute to undesired changes to the natural setting of Winters Ranch.

Cumulative benefits would be provided to recreationists in the region by implementing the Proposed Action. Some cumulative benefit would also be provided, though to a lesser degree, under the No Action alternative. Opportunities for a variety of recreational pursuits are already found on the state and county parks, and nearby BLM and U.S. Forest Service lands. With a growing population, however, demand for outdoor recreation will only increase in the future. By preserving additional lands as open space for public use, Federal, state, and local governments are working to meet this increased demand for recreational opportunities.

i. Visual Resources

Affected Environment

Winters Ranch is a large expanse of open meadows, marshes, and shrubland at the northern end of Washoe Valley. The Carson Range with the raw face of Slide Mountain rises to the west, and Washoe Lake spreads out to the east. No structures are visible on the property aside from the V&T Railroad grade and remnants of the historic Ophir Mill Assay Office, the rock structure just east of U.S. 395 and north of Ophir Creek. These structures, a few trees, and fences are the only vertical intrusions on the landscape. The property provides a scenic vista for commuters along U.S. 395, and for visitors to Bowers Mansion and Davis Creek County Park to the west, and Scripps WMA and New Washoe City to the east.

The BLM designates visual resource management (VRM) objectives for public lands during its land use planning process. Because Winters Ranch was only recently acquired by the BLM, VRM objectives have not been established for the area. Until VRM objectives are established, the property will be managed in a manner that minimizes the visual impact of activities by carefully locating projects, minimizing disturbance, and repeating the basic elements of line, form, color, and texture (BLM, 1986).

Environmental Consequences

Goal V of the plan makes preserving the scenic quality one of the key issues on Winters Ranch. The management actions proposed under Goal V would either improve or maintain the scenic quality of the property. A number of other management actions in the Proposed Action would have secondary benefits for visual resources. These include: (1) restoring stream channels, (2) establishing riparian corridors, (3) controlling weed infestations, and (4) limiting motorized vehicles to existing roads.

Implementing the plan would provide key benefits for visual resources, such as decreasing line contrasts and increasing color and texture variation. Line contrasts would be reduced by creating meanders on channelized stream reaches and blurring the sharp vegetation change along the Scripps WMA boundary. The riparian communities along the Scripps boundary and the stream corridors would also create texture and color variations that would provide visual interest.

The only project in the management plan that could have visual impacts is the proposed fuel break. The fuel break would be a linear feature along the boundary with private land in Washoe City. Visual impacts from the project are expected to be short-term and minor. First, a sharp contrast already exists along the fenced boundary between Winters Ranch and the private

residential property. Second, a number of project design features would mitigate the visual impacts, such as leaving residual vegetation on the ground, leaving patches of uncut vegetation to reduce the visual impact, and seeding fire-resistant species to prevent weed infestations. Third, growth of residual vegetation and seeded plants would greatly reduce any visual impact within a few years.

Restrictions on development proposed in the plan would provide cumulative benefits to visual resources on Winters Ranch. To a large degree, the acquisition by the BLM will protect the scenic quality of the property by maintaining it as open space rather than having it developed as a residential area. Considering visual impacts when analyzing any proposed land use would protect the scenic qualities of the property into the future.

j. Cultural Resources

Affected Environment

Winters Ranch, as identified in the plan, has been completely inventoried at an intensive level following BLM cultural resources Class III standards. Stoner et al. (1997) present the results of the inventory in a cultural resources report. To date, known cultural resources represent significant past human use of the landscape for several thousands of years on and immediately adjacent to Winters Ranch. The inventory identified numerous areas of archaeological sites and the remains of constructed features on the property. Known cultural resources on Winters Ranch include features associated with the historic-era Ophir Mill mining operations; transportation sites including a segment and spur of the V&T Railroad grade; a brick kiln; fences, features, and debris associated with the Winters Ranch; and other sites containing prehistoric and historic artifact scatters. Local site types are detailed further in the technical report prepared by Stoner et al. (1997), and in a BLM technical review and amendment to that report prepared by Lane (2008).

By definition, a historic property is a "prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places" and includes "artifacts, records, and remains that are related to and located within such properties" (36 CFR §800.16(l)(1)). In September 2008, the BLM determined that at least ten historic properties are present on Winters Ranch based on record searches at the BLM Carson City District Office and the Nevada State Museum online record system, and subsequent field assessments performed by BLM cultural resources specialists. The historic properties represent multiple pre-contact Native American camps and use areas, as well as historic-era remains. In October 2008, the BLM received concurrence from the Nevada State Historic Preservation Officer (SHPO) who agreed with the agency on the identification and evaluations of these as historic properties.

Determinations of project effects upon cultural resources deemed eligible for inclusion on the National Register of Historic Places (NRHP) would be completed prior to project undertakings, and would include consultation with the Washoe Tribe of Nevada and California, per 36 CFR § 800 and BLM (2004) policy. For the current purpose of planning at Winters Ranch, historic properties identified and evaluated as eligible under the NRHP would be avoided during ground-disturbing activities, which would result in no effect to the historic properties. If continued

avoidance is not possible during any future plan implementation phases, and the BLM cannot prevent an adverse effect to the historic properties, the adverse effect would have to be resolved as described by 36 CFR §800.6, and through consultation with the Nevada SHPO and the Washoe Tribe.

Environmental Consequences

Potential exists for adverse impacts to cultural resources as a result of implementing the Proposed Action. It is important that there would be no net loss of scientific information regarding cultural resources and that NRHP eligible sites (historic properties) would be managed so as to prevent or minimize adverse impacts. Cultural resource concerns regarding management of Winters Ranch and related effects would focus on the NRHP eligibility of historic properties, site type, and the potential impacts from management activities upon the qualities that make each property significant.

One specific management action was indentified for implementation under the Proposed Action. A 100-foot wide fuel break would be cleared along the northern parcel boundary adjacent to Washoe City. Based on a field assessment and review of the reports on areas inventoried for cultural resources in or near the proposed fuel break, the project would have the potential to affect four historic properties.

Relative to the fuel break, each of the historic properties could be avoided, with mechanical treatments limited to areas outside the known locations of historic properties to ensure compliance with Section 106 of the *National Historic Preservation Act* (NHPA). Some of these properties could be treated by hand to reduce fuels, but all hand treatments would need to be completed in coordination with BLM cultural resources specialists to ensure that no adverse effect to historic properties would occur. Historic properties would be avoided during mechanical treatments by following guidelines established in a protocol agreement between the BLM and the Nevada State Historic Preservation Office (2009), and by consulting with the Nevada SHPO and the Washoe Tribe.

For potentially ground-disturbing activities proposed in the future, such as certain monitoring methods, a qualified cultural resources specialist would need to be consulted to ensure that no buried cultural sites, features, or significant materials would be affected. To date, identified cultural resources have been described and evaluated based on materials and features visible on the modern ground surface, however, the depositional environment in Washoe Valley has a potential for buried cultural remains that would not be readily visible.

The plan points to possible future actions associated with the management of riparian areas, wildlife, fire, visual resources, and recreation, but these actions would be analyzed on a case-by-case basis under NEPA, Section 106 of the NHPA, and other relevant historic preservation laws. Each planning action would require additional specific consideration across the landscape relative to each of the known historic properties and relative to the potential for subsurface cultural remains. Possible future actions identified in the plan, such as breeching the V&T Railroad grade, would likely be considered an adverse effect to the historic resource. With the exception of the proposed fuel break, however, no specific on-the-ground actions have been

proposed in the plan. As such, management described in this plan would not have specific impacts to historic properties beyond those noted above.

If the No Action alternative were selected, current management of cultural resources would not change, and there would be no effect to historic properties. Specific management actions proposed as the need arises would be subject to review under NEPA, Section 106 of the NHPA, and other relevant historic preservation laws.

Cumulative impacts to historic properties might occur due to vandalism that could result from increased human use of the area. Vandalism is usually associated with incidental use and is not easy to control or manage on public lands. The plan, however, does not propose to dramatically increase recreational or other casual uses, and the BLM would continue to consider the potential for impacts that could result from any proposed management actions. Management actions proposed in the plan would pose no potential or hypothetical additive impact to the historic properties within or adjacent to the project area, based on the documented site types present, data analyzed, and conclusions about impacts that are presented above.

Because anticipated changes to the landscape would initially be limited to a proposed fuel break on the north boundary of Winters Ranch, overall cumulative impacts are currently expected to be negligible. Any management action proposed in the future would be analyzed for its potential to cause cumulative impacts to cultural resources.

k. Native American Religious Concerns

Affected Environment

The Native American Tribe that has cultural affiliation with Washoe Valley and the area including the Winters Ranch property is the Washoe Tribe of Nevada and California (Washoe Tribe). They were consulted in 2008 regarding development of the *Winters Ranch Management Plan* per 36 CFR §800.3(f)(2) and 43 CFR §8120, as amended. An initial consultation letter was sent to the Washoe Tribe on July 7, 2008, and consultation will be ongoing during preparation of this document and decision, and during any subsequent monitoring or implementation of an approved plan.

As a follow-up to the initial letter, BLM staff met on July 24, 2008 with Washoe Tribal Historic Preservation Officer (THPO), Darrel Cruz, and provided a map of the Winters Ranch project area and a description of proposed activities. That meeting was followed by a consultation letter from BLM to the Washoe Tribe on August 14, 2008 that also included a copy of the archeological inventory report prepared by Stoner et al. (1997) in accordance with a data sharing agreement between the Washoe Tribe and BLM Nevada. In addition, prior to implementation of any action, the Washoe Tribe has requested a site visit to the Winters Ranch project area.

According to the THPO, the Washoe people have utilized the lakes and adjacent areas in the past and maintain some association today. They also incorporate these issues within their religious system. Therefore, the Washoe Tribe has traditional, cultural, or religious property concerns in the Winters Ranch area. In general, there is no opposition to maintaining healthy ecosystems and natural conditions on the landscape.

Environmental Consequences

Both the Proposed Action and the No Action alternative would have a potential to affect tribal concerns regarding water, native plants, wildlife, and protection of historic properties. To date, however, no specific effect has been identified by the Washoe Tribe. Therefore, only general concerns exist regarding specific planned or future actions.

Each specific action would require additional case-by-case consultation. Any proposed future improvements would potentially have an effect on tribal concerns. Per 36 CFR Part 800 and 43 CFR Part 8100 (BLM), as amended, BLM would conduct Native American coordination and consultation, as necessary, for any proposed monitoring or improvements. The Washoe Tribe has been provided a draft of this NEPA document, and Tribal comments were considered in finalizing this EA.

C. MITIGATION MEASURES AND RESIDUAL EFFECTS

Mitigation includes specific means, measures, or practices that would reduce or eliminate effects of the Proposed Action or No Action alternative (BLM, 2008b). Measures that have already been incorporated into the Proposed Action to address potential impacts are considered design features rather than mitigation. Residual effects are direct, indirect, or cumulative environmental impacts that could result from the Proposed Action even after mitigation measures have been applied.

No mitigation measures are being prescribed for the Proposed Action or No Action alternative, and no residual effects are expected. It is possible that mitigation would be required for future projects that could be proposed, but appropriate mitigation would be determined at that time.

D. MONITORING

The Winters Ranch Management Plan outlines a number of goals regarding resource conditions, visitor use, health and safety, and more. To determine whether the goals are being achieved would require a variety of monitoring methods that address specific aspects of the plan. Monitoring can be categorized as (1) baseline, (2) compliance, or (3) cause-and-effect monitoring. Each of these types is described below with specific applications to management on Winters Ranch.

1. Baseline Monitoring

Baseline monitoring provides basic information about resource conditions over time. Generally, monitoring locations would be established and data would be collected regularly for years. Trends in resource condition would be detected through baseline monitoring, so the data provided would indicate when management changes are needed. Examples of the types of information that baseline monitoring would provide include:

- measuring streamflow to quantify the water available for resources
- tracking the types and amount of visitor use
- monitoring plant species abundance, composition, and structure
- monitoring wildlife populations and habitats
- assessing riparian functionality
- conducting inspections of cultural resource sites to note any impacts

2. Compliance Monitoring

Compliance monitoring would be performed to ensure applicable laws, regulations, policies, and other requirements are followed. Examples the compliance monitoring that would be performed on Winters Ranch include:

- measuring water use to ensure that the terms of BLM water rights are met
- monitoring Ophir Creek water quality to ensure state standards are being met
- conducting law enforcement patrols to ensure that laws are followed
- conducting site inspections during the fuel break project to ensure that BMPs are implemented

3. Cause-and-Effect Monitoring

Cause-and-effect monitoring is used to quantify the impacts of specific management actions. Examples of cause-and-effect monitoring that would be performed on Winters Ranch include:

- monitoring the impacts of the proposed fuel break
- determining whether the objectives of vegetation treatments were successful
- monitoring the effectiveness of noxious weed treatments

Detailed monitoring objectives still need to be developed. Goals I, II, and III of this plan state that a monitoring program will be designed and implemented within one year of adoption of the management plan. The monitoring plan would provide the what, where, when, how, and why of the specific parameters to be measured, and would explain the course of action to be taken once the data are collected.

IV. CONSULTATION AND COORDINATION

A. LIST OF PREPARERS

Name	Title	Project Expertise
Jim Schroeder	Supervisory Resource Management Specialist	Planning Lead; Water Resources; Floodplains; Wetlands/Riparian Zones; Visual Resources
Keith Barker	Fire Ecologist	Fire Management
Bill Britton[2]	Wildlife Biologist	Wildlife and Fisheries; Threatened or Endangered Species (Animals); BLM Special Status Species (Animals); Migratory Birds
Brian Buttazoni	Planning and Environmental Coordinator	NEPA Compliance
Arthur Callan	Outdoor Recreation Planner	Recreation
James Carter	Lead Archaeologist	Cultural Resources; Native American Religious Concerns
James de Laureal	Soil Scientist	Soils
Dan Jacquet	Community Liaison	Community Outreach
Katrina Leavitt	Rangeland Management Specialist	Livestock Management
Terry Neumann	Geologist	Wastes, Hazardous or Solid
Dean Tonenna	Botanist	Vegetation; Threatened or Endangered Species (Plants); BLM Special Status Species (Plants); Invasive, Nonnative Species
Pilar Ziegler	Wildlife Biologist	Wildlife and Fisheries; Threatened or Endangered Species (Animals); BLM Special Status Species (Animals); Migratory Birds

[2] Bill Britton is a contract Wildlife Biologist working for the U.S. Forest Service Enterprise Team. All other preparers are current or former BLM employees in the Carson City District Office.

B. PERSONS, GROUPS AND/OR AGENCIES CONSULTED OR CONTACTED

The *Winters Ranch Management Plan and Environmental Assessment* was available to the public during a 30-day review period which ended on April 20, 2011. Seven of the eight comments received were supportive and none opposed the plan. The Nevada Department of Transportation pointed out that any work performed in the State right-of-way would require a temporary or permanent encroachment permit, as applicable.

The most substantive comments came from the Nevada Department of Wildlife (NDOW). Though they support the plan, NDOW recommended that the BLM: (1) complete a more detailed hydrologic analysis, including consideration of Scripps Wildlife Management Area, and (2) place a greater emphasis on wetland habitats over stream habitats in the management goals.

NDOW's recommendations were carefully considered, but changes to the plan were deemed unnecessary. First, hydrologic studies have already begun on Winters Ranch. University of Nevada, Reno investigators are studying the correlation of plant communities and ground-water availability, and future studies are planned. Second, adaptive management principles will be used to maximize resource benefits over time. Close coordination with NDOW and the Scripps WMA would take place as the BLM implements the plan and adapts to changing conditions.

Prior to the comment period the following entities were consulted or contacted during preparation of the *Winters Ranch Management Plan*:

1. Washoe Tribe of Nevada and California

2. Washoe Valley Working Group, consisting of:

    - Lahontan Audubon Society
    - Nevada Department of Transportation
    - Nevada Department of Wildlife
    - Nevada Division of State Parks
    - Nevada Division of State Lands
    - Nevada Division of Forestry
    - Nevada Land Conservancy
    - Supporters of Scripps Wildlife Management Area
    - The Conservation Fund
    - U.S. Fish and Wildlife Service
    - U.S. Forest Service
    - Washoe County Parks and Open Space Department
    - Washoe County Community Development Department
    - West Washoe Citizens Advisory Board

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Key: **UG-Underground; IRR-Irrigation; REC-Recreation; WL-Wildlife**
AFA- Acre-feet per annum; cfs-cubic feet per second

The information in this table was current as of August 20, 2008. It was compiled from information available in the Nevada Division of Water Resources (2007) water rights database at http://water.nv.gov/Water%20Rights/PermitDB/permitdb_disclaimer.cfm

Proof / Permit No.	**V02441[A]**	**V02754[A]**	**V02756[A]**	**68117**	**68118**	**68119**	**68120**	**68101[B]**	**68111[A]**	**68112[A]**	**68113[A]**	**68114[A]**	**68115[A]**	**68116[A]**	**66232**	**66233**	**69433**	**69570**	**69731**
Status	Decreed	Decreed	Decreed	Permit	Permit	Permit	Permit	Permit	Permit	Permit	Permit	Permit	Permit	Permit	Permit	Permit	Permit	Permit	Permit
Certificate	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Change of Application	None	None	None	61724	61628	61629	61627	24004	20648	21413	23287	30579	30581	35554	57917	57918	66235	66231	66234
Source	Ophir Cr	Davis Cr	Winters Cr	UG	UG	UG	UG	UG	UG	UG	UG	UG	UG	UG	UG	UG	UG	UG	UG
Manner of Use	IRR	IRR	IRR	IRR	IRR	IRR	IRR	IRR	IRR	IRR	IRR	IRR	IRR	IRR	REC/WL	REC/WL	REC/WL	REC/WL	REC/WL
Period of Use	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31	1/1-12/31
Filing Date	9/14/1959	5/15/1972	5/15/1972	10/16/2001	10/16/2001	10/16/2001	10/16/2001	10/16/2001	10/16/2001	10/16/2001	10/16/2001	10/16/2001	10/16/2001	10/16/2001	3/31/2000	3/31/2000	1/2/2003	2/7/2003	3/13/2003
Priority Date	1859/1862	1/1/1862	1/1/1862	8/2/1966	7/31/1963	8/24/1976	8/20/1962	7/14/1967	8/20/1962	7/31/1963	8/2/1966	12/23/1981	8/24/1976	8/24/1976	8/29/1978	8/29/1978	8/29/1978	8/29/1978	8/29/1978
Decree/Permit Date	2/13/1984	11/1/1977	11/22/1978	7/23/2002	7/23/2002	7/23/2002	7/23/2002	11/4/2003	11/4/2003	11/4/2003	11/4/2003	11/4/2003	11/4/2003	11/4/2003	1/30/2002	1/30/2002	2/19/2004	2/19/2004	2/19/2004
Duty (AFA)	2348.45	1173.41	1642.36	5.54	55	19.56	108.71	44.07	502.52	41.54	274.35	263.19	116.37	135.68	47.614	47.614	6.1378	47.614	47.614
Diversion (cfs)	13.495	7.189	10.341	0.009	0.076	0.027	0.15	0.061	0.707	0.057	0.444	0.5007	0.1608	0.333	0.5	0.5	0.25	0.5	0.5
Acres Total	551.7	290.58	367.71	--	--	--	--	--	141.14	11.25	66.69	58.487	30.22	30.151	--	--	--	--	--
Acres Diversified Pasture	134.2	134.2	224.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Acres Harvest Crop	417.5	156.38	190.59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Point of Diversion T	17N	17N	19N	17N	17N	17N	17N	17N	16N	16N	17N	17N	17N	17N	17N	17N	17N	17N	17N
Point of Diversion R	19E	19E	19E	19E	19E	19E	19E	19E	19E	19E	19E	19E	19E	19E	19E	19E	19E	19E	19E
Point of Diversion SEC	34	27	27	26	26	26	26	26	3	3	34	35	35	34	26	35	26	26	35
Point of Diversion QQ	SE SE	SW SE	SE NE	SE NW	SE NW	NE NW	NE NW	NW SW	NE NW	NE NW	NE NE	SW SW	SW NW	NE NE	SW SW	SW SW	SW SW	SW SW	SW SW
Place of Use	See POU V02441	See POU V02754	See POU V02756	See POU 68117 et al	See POU 68117 et al	See POU 68117 et al	See POU 68117 et al	See POU 68101 et al	See POU 68101 et al	See POU 68101 et al	See POU 68101 et al	See POU 68101 et al	See POU 68101 et al	See POU 68101 et al	See POU 66232 et al	See POU 66232 et al	See POU 66232 et al	See POU 66232 et al	See POU 66232 et al
Owner (other than BLM)	Multiple	Multiple	Multiple	Serpa	Serpa	Serpa	Serpa	Falcon Cap	Falcon Cap	Falcon Cap	Falcon Cap	Falcon Cap	Falcon Cap	Falcon Cap	--	--	--	--	--
Duty (other than BLM)	1561.05	131.94	42.345	3.92	38.84	13.8	76.74	16.93	27.338	2.26	14.93	14.325	6.334	7.375	--	--	--	--	--
Div (other than BLM)	8.97	0.809	0.264	0.006	0.054	0.019	0.106	0.023	0.039	0.003	0.024	0.0273	0.0087	0.0181	--	--	--	--	--
Acres Total	346.9	29.32	9.41	--	--	--	--	--	7.69	0.61	3.63	3.183	1.64	1.639	--	--	--	--	--
Changed by Application	66526[C]	66527[D]	--	69898	69899	69900	69901	--	75136	75137	75138	75139	75140	75141	--	--	--	--	--
Change Application Status	Withdrawn	Withdrawn	--	Permit	Permit	Permit	Permit	--	Permit	Permit	Permit	Permit	Permit	Permit	--	--	--	--	--
Total Combined Duty (AFA)				BLM portion limited to 131.28 AFA Includes 68117-68120					Limited to 564.6 AFA Includes 68111-68116						Limited to 101.366AFA Includes 66232, 66233, 69433, 69570, 69731				

Notes:

[A]Permits 68111-68116 are supplemental to surface rights on Ophir, Davis, and Winters creeks, which include V02441, V02754, and V02756 plus other proofs on the stream systems.
Permits 68111-68116 may not exceed 4.0 acre-feet per acre and have a total combined duty of 595.32 AFA for 148.83 acres.
Proofs V02441, V02754, V02756 have decreed duties of 4.5 AFA/acre for harvest crop and 3.5 AFA/acre for diversified pasture. See the terms of the decrees for details.

[B]68101 is a standalone permit with the same place of use as 68111-68116. Staff at NDWR speculates that 68101 will become supplemental to 68111-68116 upon certification.

[C]Change application filed, but withdrawn by Falcon Capital. FC currently owns 1454.22 AFA, 8.356 cfs, 323.16 acres.

[D]Change application filed, but withdrawn by Falcon Capital. FC currently owns 47.61 AFA, 0.292 cfs, 10.58 acres.

Appendix A-1. Summary of Winters Ranch Water Rights Acquired by the BLM.

Appendix A-2. Place of Use for Water Right Proof V02441.

Quarter Quarter	Quarter Section	Section	Township	Range	Acres
NW	NW	2	16N	19E	37.8
SW	NW	2	16N	19E	18
NE	NE	3	16N	19E	37.9
NW	NE	3	16N	19E	38.1
SE	NE	3	16N	19E	20
SW	NE	3	16N	19E	18.4
NE	NW	3	16N	19E	12.7
SE	NW	3	16N	19E	3.5
NE	NW	25	17N	19E	1.8
SE	NW	25	17N	19E	17.1
SW	NW	25	17N	19E	7.6
NE	SW	25	17N	19E	2.1
NW	SW	25	17N	19E	8.3
SE	NE	26	17N	19E	3.5
SW	NE	26	17N	19E	9.4
SE	NW	26	17N	19E	4.1
SW	NW	26	17N	19E	9.9
NE	SE	26	17N	19E	30.1
NW	SE	26	17N	19E	40
SE	SE	26	17N	19E	5.4
SW	SE	26	17N	19E	33.6
NE	SW	26	17N	19E	38.4
SE	SW	26	17N	19E	35.6
SW	SW	26	17N	19E	31.9
SE	SE	27	17N	19E	5.4
NE	NE	34	17N	19E	19.5
SE	NE	34	17N	19E	12.8
SE	SE	34	17N	19E	14.1
SW	SE	34	17N	19E	7.5
NW	NE	35	17N	19E	28.8
SW	NE	35	17N	19E	27.7
NE	NW	35	17N	19E	38.3
NW	NW	35	17N	19E	32.2
SE	NW	35	17N	19E	40
SW	NW	35	17N	19E	30.2
SW	SE	35	17N	19E	9.8
NE	SW	35	17N	19E	40
NW	SW	35	17N	19E	25
NW	SW	35	17N	19E	29.9
SE	SW	35	17N	19E	40
SW	SW	35	17N	19E	32.2

Note:
Portions of Proofs 02441, 02754, 02756, & 02757 are supplemental and comingled across the place of use.

Appendix A-3. Place of Use for Water Right Proof V02754.

Quarter Quarter	Quarter Section	Section	Township	Range	Acres
NE	NW	25	17N	19E	1.8
SE	NW	25	17N	19E	17.1
SW	NW	25	17N	19E	7.6
NE	SW	25	17N	19E	2.1
NW	SW	25	17N	19E	8.3
SE	NE	26	17N	19E	3.5
SW	NE	26	17N	19E	9.4
SE	NW	26	17N	19E	4.1
NE	SE	26	17N	19E	30.1
NW	SE	26	17N	19E	40
SE	SE	26	17N	19E	5.4
SW	SE	26	17N	19E	33.6
NE	SW	26	17N	19E	38.4
NW	SW	26	17N	19E	9.9
SE	SW	26	17N	19E	35.6
SW	SW	26	17N	19E	31.9
SE	SE	27	17N	19E	5.4
NE	NE	34	17N	19E	2.9
NW	NE	35	17N	19E	15.1
NE	NW	35	17N	19E	7.1
NW	NW	35	17N	19E	10.6

Note:
Portions of Proofs 02441, 02754, 02756, & 02757 are supplemental and comingled across the place of use.

Appendix A-4. Place of Use for Water Right Proof V02756.

Quarter Quarter	Quarter Section	Section	Township	Range	Acres
NE	NW	25	17N	19E	1.8
NW	NW	25	17N	19E	1.7
SE	NW	25	17N	19E	17.9
SW	NW	25	17N	19E	37.6
NE	SW	25	17N	19E	2.3
NW	SW	25	17N	19E	10.7
NE	NE	26	17N	19E	18.7
NW	NE	26	17N	19E	27.9
SE	NE	26	17N	19E	40
SW	NE	26	17N	19E	40
NE	NW	26	17N	19E	19.7
NW	NW	26	17N	19E	0.9
SE	NW	26	17N	19E	40
SW	NW	26	17N	19E	3.3
NE	SE	26	17N	19E	37
NW	SE	26	17N	19E	40
SE	SE	26	17N	19E	5.4
SW	SE	26	17N	19E	23.7
NE	SW	26	17N	19E	39.4
NW	SW	26	17N	19E	2.6
SE	SW	26	17N	19E	11
SW	SW	26	17N	19E	1.7

Note:
Portions of Proofs 02441, 02754, 02756, & 02757 are supplemental and comingled across the place of use.

Appendix A-5. Place of Use for Water Right Permits 68117 through 68120.

Quarter Quarter	Quarter Section	Section	Township	Range	Acres
SE	SE	23	17N	19E	0
NE	SW	24	17N	19E	0
NW	SW	24	17N	19E	0
SE	SW	24	17N	19E	0
NE	NW	25	17N	19E	0
NW	NW	25	17N	19E	0
SE	NW	25	17N	19E	0
SW	NW	25	17N	19E	0
NE	NE	26	17N	19E	0
NW	NE	26	17N	19E	0
SE	NE	26	17N	19E	0
SW	NE	26	17N	19E	0
NE	NW	26	17N	19E	0
SE	NW	26	17N	19E	0
SW	NW	26	17N	19E	0

Appendix A-6. Place of Use for Water Right Permits 68101, and 68111 through 68116.

Quarter Quarter	Quarter Section	Section	Township	Range	Acres
NW	NW	2	16N	19E	0
SW	NW	2	16N	19E	0
NE	NE	3	16N	19E	0
NW	NE	3	16N	19E	0
SE	NE	3	16N	19E	0
SW	NE	3	16N	19E	0
NE	NW	3	16N	19E	0
SE	NW	3	16N	19E	0
SE	SE	23	17N	19E	0
NE	SW	24	17N	19E	0
NW	SW	24	17N	19E	0
SE	SW	24	17N	19E	0
SW	SW	24	17N	19E	0
NE	NW	25	17N	19E	0
NW	NW	25	17N	19E	0
SE	NW	25	17N	19E	0
SW	NW	25	17N	19E	0
NE	SW	25	17N	19E	0
NW	SW	25	17N	19E	0
NE	NE	26	17N	19E	0
NW	NE	26	17N	19E	0
SE	NE	26	17N	19E	0
SW	NE	26	17N	19E	0
NE	NW	26	17N	19E	0
SE	NW	26	17N	19E	0
SW	NW	26	17N	19E	0
NE	SE	26	17N	19E	0
NW	SE	26	17N	19E	0
SE	SE	26	17N	19E	0
SW	SE	26	17N	19E	0
NE	SW	26	17N	19E	0
NW	SW	26	17N	19E	0
SE	SW	26	17N	19E	0
SW	SW	26	17N	19E	0
SE	SE	27	17N	19E	0
NE	NE	34	17N	19E	0
SE	NE	34	17N	19E	0
SE	SE	34	17N	19E	0
SW	SE	34	17N	19E	0
SW	NE	35	17N	19E	0
NE	NW	35	17N	19E	0
NE	NW	35	17N	19E	0
NW	NW	35	17N	19E	0
SE	NW	35	17N	19E	0
SW	NW	35	17N	19E	0
NW	SE	35	17N	19E	0
SW	SE	35	17N	19E	0
NE	SW	35	17N	19E	0
NW	SW	35	17N	19E	0
SE	SW	35	17N	19E	0
SW	SW	35	17N	19E	0

Appendix A-7. Place of Use for Water Right Permits 66232, 66233, 69433, 69570, and 69731.

Quarter Quarter	Quarter Section	Section	Township	Range	Acres
SE	SE	23	17N	19E	0
E2	SW	24	17N	19E	0
NW	SW	24	17N	19E	0
SW	SW	24	17N	19E	0
E2	NW	25	17N	19E	0
W2	NW	25	17N	19E	0
NW	SW	25	17N	19E	0
N2	NE	26	17N	19E	0
S2	NE	26	17N	19E	0
	NW	26	17N	19E	0
	SE	26	17N	19E	0
E2	SW	26	17N	19E	0
W2	SW	26	17N	19E	0
E2	NE	35	17N	19E	0
E2	NW	35	17N	19E	0
W2	NW	35	17N	19E	0
W2	SE	35	17N	19E	0
E2	SW	35	17N	19E	0
W2	SW	35	17N	19E	0

Appendix B-1. Standards applicable to all surface waters of Nevada (NAC 445A.121).

1. Waters must be free from substances attributable to domestic or industrial waste or other controllable sources that will settle to form sludge or bottom deposits in amounts sufficient to be unsightly, putrescent or odorous or in amounts sufficient to interfere with any beneficial use of the water.

2. Waters must be free from floating debris, oil, grease, scum and other floating materials attributable to domestic or industrial waste or other controllable sources in amounts sufficient to be unsightly or in amounts sufficient to interfere with any beneficial use of the water.

3. Waters must be free from materials attributable to domestic or industrial waste or other controllable sources in amounts sufficient to produce taste or odor in the water or detectable off-flavor in the flesh of fish or in amounts sufficient to change the existing color, turbidity or other conditions in the receiving stream to such a degree as to create a public nuisance or in amounts sufficient to interfere with any beneficial use of the water.

4. Waters must be free from high temperature, biocides, organisms pathogenic to human beings, toxic, corrosive or other deleterious substances attributable to domestic or industrial waste or other controllable sources at levels or combinations sufficient to be toxic to human, animal, plant or aquatic life or in amounts sufficient to interfere with any beneficial use of the water. Compliance with the provisions of this subsection may be determined in accordance with methods of testing prescribed by the Department. If used as an indicator, survival of test organisms must not be significantly less in test water than in control water.

5. If toxic materials are known or suspected by the Department to be present in a water, testing for toxicity may be required to determine compliance with the provisions of this section and effluent limitations. The Department may specify the method of testing to be used. The failure to determine the presence of toxic materials by testing does not preclude a determination by the Department, on the basis of other criteria or methods, that excessive levels of toxic materials are present.

6. Radioactive materials attributable to municipal, industrial or other controllable sources must be the minimum concentrations that are physically and economically feasible to achieve. In no case must materials exceed the limits established in the 1962 Public Health Service Drinking Water Standards (or later amendments) or 1/30th of the MPC values given for continuous occupational exposure in the "National Bureau of Standards Handbook No. 69." The concentrations in water must not result in accumulation of radioactivity in plants or animals that result in a hazard to humans or harm to aquatic life.

7. Wastes from municipal, industrial or other controllable sources containing arsenic, barium, boron, cadmium, chromium, cyanide, fluoride, lead, selenium, silver, copper and zinc that are reasonably amenable to treatment or control must not be discharged untreated or uncontrolled into the waters of Nevada. In addition, the limits for concentrations of the chemical constituents must provide water quality consistent with the mandatory requirements of the 1962 Public Health Service Drinking Water Standards.

8. The specified standards are not considered violated when the natural conditions of the receiving water are outside the established limits, including periods of extreme high or low flow. Where effluents are discharged to such waters, the discharges are not considered a contributor to substandard conditions provided maximum treatment in compliance with permit requirements is maintained. [Environmental Comm'n, Water Pollution Control Reg. § 4.1.2 subsecs. a-g, eff. 5-2-78]—(NAC A 9-26-90; R017-99, 9-27-99)

Appendix B-2. Ophir Creek Beneficial Uses and Water Quality Standards as a Class B Water. (NAC445A.125).

1. Class B waters include waters or portions of waters which are located in areas of light or moderate human habitation, little industrial development, light-to-moderate agricultural development and where the watershed is only moderately influenced by man's activity.

2. The beneficial uses of class B water are municipal or domestic supply, or both, with treatment by disinfection and filtration only, irrigation, watering of livestock, aquatic life and propagation of wildlife, recreation involving contact with the water, recreation not involving contact with the water, and industrial supply.

3. The quality standards for class B waters are:

Item	Specifications
Floating solids, settleable solids or sludge deposits.	Only such amounts attributable to man's activities which will not make the waters unsafe or unsuitable as a drinking water source or injurious to fish or wildlife, or will not impair the waters for any other beneficial use established for this class.
Sewage, industrial wastes or other wastes.	None which are not effectively treated to the satisfaction of the Department.
Odor-producing substances.	Only such amounts which will not impair the palatability of drinking water or fish or have a deleterious effect upon fish, wildlife or any beneficial uses established for waters of this class.
Toxic materials, oil, deleterious substances, colored or other wastes, or heated or cooled liquids.	Only such amounts as will not render the receiving waters injurious to fish or wildlife or impair the receiving waters for any beneficial uses established for this class.
pH.	6.5 to 9.0 SU.
Dissolved oxygen: Trout waters.[a] All other waters.	 ≥6.0 mg/l. ≥5.0 mg/l.
Temperature: Maximum: Trout waters.[a] All other waters. ΔT.	 ≤20°C. ≤24°C. =0°C.
Fecal coliform (No./100ml).	≤200/400.[b]
Total phosphorus (as P).	≤0.10 mg/l.
Total dissolved solids.	≤500 mg/l or one-third above that characteristic of natural conditions (whichever is less).

a. Trout waters are identified in subsection 4 by the symbol "(T)."

b. The fecal coliform concentration, based on a minimum of five samples during any 30-day period, must not exceed a geometric mean of 200 per 100 milliliters, and not more than 10 percent of total samples during any 30-day period may exceed 400 per 100 milliliters.

Appendix C. Best Management Practices for the Proposed Fuel Break Adjacent to Washoe City.

The following best management practices (BMPs) are to be used to minimize soil erosion and protect water quality when completing forestry or hazardous fuel reduction projects. The management objectives of these projects are achieved by altering vegetation communities. Implementing the BMPs would minimize unnecessary surface disturbance and damage to residual vegetation that protects soils from erosion.

BMP 1: Schedule projects during low-impact periods.

Definition: Projects would be scheduled to avoid wet soil conditions. To prevent soil compaction, rutting, and erosion, equipment will not be operated on sites with wet soils. Wet soils are defined as those soils with sufficient moisture in the surface six inches to exhibit plasticity, which can be determined in the field by kneading a sample in the hand until a cohesive ball of soil is made. Drier soils typically will be too hard to knead, will crumble, or will be granular without a well-defined structure (e.g., sands).

Purpose: Timber and fuels projects can cause soil disturbance and damage non-target plants that provide ground cover. BMP 1 restricts projects to periods that would minimize the likelihood of these impacts.

Applicability: This practice would apply to any project site when significant soil surface disturbance could occur, but is especially important on fine-textured soils and soils with well developed structure, such as loams. These soils are especially prone to compaction, rutting, and similar impacts.

Planning Criteria: If contracting or scheduling in-house labor, plan to complete work during periods when soils are typically dry. Fall and winter are the preferred seasons for fuels projects due to the low risk of wildfire, BLM budget cycles, and greater availability of fire personnel. Regional precipitation primarily occurs in winter, however, so flexibility should be provided in the work schedule to avoid wet conditions.

BMP 2: Minimize and mitigate surface disturbances.

Definition: Methods that avoid unnecessary surface disturbance would be chosen.

Purpose: These management practices would reduce or mitigate surface disturbances which can lead to soil erosion in many ways, including (1) directly detaching and transporting soil, (2) exposing soil to erosion by reducing non-target vegetative ground cover, (3) compacting soils and reducing infiltration, and (4) rutting that concentrates overland flow.

Applicability: BMP 2 would apply to any project where significant surface disturbance could occur, but is especially important on fine-textured soils, such as loams, and soils with well-developed structure. These soils are especially prone to compaction, rutting, or similar impacts.

Planning Criteria: Site access should minimize the amount and intensity of disturbance associated with vehicle traffic and off-road travel. Choose appropriate treatment methods to minimize surface disturbance and to avoid impacts to non-target plants when felling trees, operating machinery, and performing other tasks.

Methods:
1. Minimize the area and intensity of disturbance. For example, a road that switchbacks up a slope would disturb a greater area, but have less impact than one directed up and down a slope.
2. Avoid repeated vehicle or equipment traffic on areas prone to soil and vegetation impacts.
3. Plan vehicle routes where they would do the least damage, such as rock outcrops or coarse-textured soils that resist compaction.
4. Travel and conduct treatment operations along the contour of the slope to the extent possible to avoid channelizing overland flow.
5. When leaving slash or wood chips onsite, scatter over disturbed areas to protect exposed soils from raindrop impact.

BMP 3: Avoid sensitive riparian areas, wetlands, and drainages.

Definition: Exclude treatment from sensitive riparian areas, wetlands, and drainages, including an adequate buffer where appropriate. The presence of water in these areas could be ephemeral, so BMP 3 might be necessary where no surface water is present during project planning and implementation. Note that BMP 3 could be modified or limited for projects that target plants in these areas (e.g., removing juniper near a spring to reduce competition with riparian species).

Purpose: BMP 3 is designed to protect sensitive riparian and wetland areas, and to prevent sediment deposition in drainages where the sediment could be transported to water bodies.

Applicability: This practice could apply to any project where an identifiable drainage exists, but is especially important for perennial waters, riparian and wetland areas, and where adrainage leads from the project area to a water body.

Planning Criteria: Survey the project area to identify riparian and wetland areas, and drainages. Evaluate the potential for sediment to be generated by the project and delivered to offsite water bodies. Determine what areas would be left untreated to protect these resources. Size of buffers would depend on project objectives and site conditions, such as soil type, vegetative cover, slope, and aspect.

Methods:
1. Mark buffer areas to be left untreated or where treatment would be limited.
2. Be sure work crews receive clear instructions on the meaning of any markers.
3. Map avoidance areas in GIS to facilitate planning and communication with work crews.
4. Have a project inspector onsite during operations to instruct crews on avoidance areas.
5. If avoidance is unfeasible, use portable bridges or other devices to prevent impacts.
6. Do not perform equipment maintenance onsite where fuel, lubricants, or other contaminants could enter water bodies.

Appendix D-1. General Plant Species That Occur on Winters Ranch.

Common Name	Scientific Name
Trees	
Thinleaf alder	*Alnus incana ssp. tenuifolia*
Silver sagebrush	*Artemisia cana*
Mountain big sagebrush	*Artemisia tridentata ssp. vaseyana*
White sagebrush	*Artemisia ludoviciana*
Russian olive	*Elaeagnus angustifolia*
Rubber rabbitbrush	*Ericameria nauseosa*
Jeffrey pine	*Pinus jeffreyi*
Quaking aspen	*Populus tremuloides*
Black cottonwood	*Populus balsamifera ssp. trichocarpa*
Rose	*Rosa sp.*
Narrowleaf willow	*Salix exigua*
Geyer willow	*Salix geyeriana*
Red willow	*Salix laevigata*
Grasses	
Redtop	*Agrostis gigantea*
Meadow foxtail	*Alopecurus pratensis*
Dense silkybent	*Apera interrupta*
Bald brome	*Bromus racemosus*
Smooth brome	*Bromus inermis*
Cheatgrass	*Bromus tectorum*
Slenderbeak sedge	*Carex athrostachya*
Douglas' sedge	*Carex douglasii*
Nebraska sedge	*Carex nebrascensis*
Clustered field sedge	*Carex praegracilis*
Bearded flatsedge	*Cyperus squarrosus*
Annual hairgrass	*Deschampsia danthonioides*
Saltgrass	*Distichlis spicata*
Spikerush	*Eleocharis*
Squirreltail	*Elymus elymoides*
Quackgrass	*Elymus repens*
Red fescue	*Festuca rubra*
Common velvetgrass	*Holcus lanatus*
Meadow barley	*Hordeum brachyanthum*
Foxtail barley	*Hordeum jubatum*
Mouse barley	*Hordeum murinum*
Mountain rush	*Juncus arcticus ssp. littoralis*
Toad rush	*Juncus bufonius*

Longstyle rush	*Juncus longistylis*
Sierra rush	*Juncus nevadensis*
Straightleaf rush	*Juncus orthophyllus*
Beardless wildrye	*Leymus triticoides*
Scratchgrass	*Muhlenbergia asperifolia*
Mat muhly	*Muhlenbergia richardsonis*
Reed canarygrass	*Phalaris arundinacea*
Bulbous bluegrass	*Poa bulbosa*
Cusick's bluegrass	*Poa cusickii*
Sandberg bluegrass	*Poa secunda*
Kentucky bluegrass	*Poa pratensis*
Annual rabbitsfoot grass	*Polypogon monspeliensis*
Lemmon's alkaligrass	*Puccinellia lemmonii*
Small fescue	*Vulpia microstachys*
Rat-tail fescue	*Vulpia myuros*
Herbaceous	
Common yarrow	*Achillea millefolium*
Rosy pussytoes	*Antennaria rosea*
Chamisso arnica	*Arnica chamissonia*
Douglas' sagewort	*Artemisia douglasiana*
White sagebrush	*Artemisia ludoviciana*
Canadian milkvetch	*Astragalus canadensis*
Freckled milkvetch	*Astragalus lentiginosus*
Woollypod milkvetch	*Astragalus purshii*
American yellowrocket	*Barbarea orthoceras*
Tansyleaf primrose	*Camissonia tanacetifolia*
Shepherd's purse	*Capsella bursa-pastoris*
Parrothead Indian paintbrush	*Castilleja pilosa*
Hairy Indian paintbrush	*Castilleja tenuis*
Diffuse knapweed	*Centaurea diffusa*
Big chickweed	*Cerastium fontanum ssp. vulgare*
Curveseed butterwort	*Ceratocephala testiculata*
Lambsquarters	*Chenopodium album*
Jerusalem oak goosefoot	*Chenopodium botrys*
Crossflower	*Chorispora tenella*
Chicory	*Cichorium intybus*
Bull thistle	*Cirsium vulgare*
Miner's lettuce	*Claytonia perfoliata*
Maiden blue eyed Mary	*Collinsia parviflora*
Poison hemlcok	*Conium maculatum*

Field bindweed	*Convolvulus arvensis*
Fiddleleaf hawksbeard	*Crepis runcinata*
Cushioin cryptantha	*Cryptantha circumscissa*
Herb sophia	*Descurainia sophia*
Spring draba	*Draba verna*
Denseflower willowherb	*Epilobium densiflorum*
Smooth spike-primrose	*Epilobium pygmaeum*
--	*Epilobium brachyanthum*
Fringed willowherb	*Epilobium ciliatum*
Smooth horsetail	*Equisetum laevigatum*
Spreading fleabane	*Erigeron divergens*
Bailey's buckwheat	*Eriogonum baileyi*
Redstem stork's bill	*Erodium cicutarium*
Zigzag groundsmoke	*Gayophytum heterozygum*
Pinyon groundsmoke	*Gayophytum ramosissimum*
Shy gilia	*Gilia inconspicua*
California hesperochiron	*Hesperochiron californicus*
Jagged chickweed	*Holosteum umbellatum*
Prostrate hutchinsia	*Hutchinsia procumbens*
Common St. Johnswort	*Hypericum perforatum*
Rocky Mountain iris	*Iris missouriensis*
Povertyweed	*Iva axillaris*
Prickly lettuce	*Lactuca serriola*
Alkali pepperweed	*Lepidium dictyotum*
Broadleaved pepperweed	*Lepidium latifolium*
Clasping pepperweed	*Lepidium perfoliatum*
American bird's-foot trefoil	*Lotus unifoliolatus var unifoliolatus*
Donner Lake lupine	*Lupinus sellulus*
Common mallow	*Malva neglecta*
Disc mayweed	*Matricaria discoidea*
Slender phlox	*Microsteris gracilis*
Seep monkeyflower	*Mimulus guttatus*
Annual water minerslettuce	*Montia fontana*
Narrowleaf minerslettuce	*Montia linearis*
Tiny mousetail	*Myosurus minimus*
Divaricate navarretia	*Navarretia divaricata*
Hooker's evening primrose	*Oenothera elata*
Rydberg's penstemon	*Penstemon rydbergii*
Lemmon's yampah	*Perideridia lemmonii*
Soft popcornflower	*Plagiobothrys mollis*
Scouler's popcornflower	*Plagiobothrys scouleri*
Narrowleaf plantain	*Plantago lanceolata*

Annual polemonium	*Polemonium micranthum*
Oval-leaf knotweed	*Polygonum arenastrum*
Sticky cinquefoil	*Potentilla glandulosa*
Slender cinquefoil	*Potentilla gracilis*
Clustered goldenweed	*Pyrrocoma racemosus*
Bluntleaf yellowcress	*Rorippa curvipes*
Common sheep sorrel	*Rumex acetosella*
Curly dock	*Rumex crispus*
Mexican dock	*Rumex salicifolius var mexicanus*
Tall tumblemustard	*Sisymbrium altissimum*
Nevada blue-eyed grass	*Sisyrinchium halophilum*
Longstalk starwort	*Stellaria longipes*
Western aster	*Symphyotrichum ascendens*
Western meadow aster	*Symphyotrichum campestre*
Common dandelion	*Taraxacum officinale*
Crisped thelypody	*Thelypodium crispum*
Yellow salsify	*Tragopogon dubius*
Alsike clover	*Trifolium hybridum*
Lonstalk clover	*Trifolium longipes*
Whitetip clover	*Trifolium variegatum*
Common mullein	*Verbascum thapsus*
Wand mullein	*Verbascum virgatum*
Neckweed	*Veronica peregrina*

Source: Stringham (2010).

Appendix D-2. General Wildlife and Fish Species That Occur on Winters Ranch.

Common Name	Scientific Name	Habitat Types[1]	Habitat Use
Birds			
American bittern	*Botaurus lentiginosus*	2	Foraging, nesting
American coot	*Fulica americana*	2	Use during wet periods
American crow	*Corvus brachyrhynchos*	2, 3, 4, 5	Foraging
American kestrel	*Falco sparverius*	2, 3, 4, 5	Foraging
American robin	*Turdus migratorius*	3, 4, 5	Foraging
American white pelican	*Pelecanus erythrorhynchos*	--	Flyovers associated with Washoe Lake
American wigeon	*Anas americana*	1, 2	Foraging, potential nesting
Bank swallow	*Riparia riparia*	2, 3, 4, 5	Foraging
Barn owl	*Tyto alba*	2, 3, 4, 5	Foraging
Barn swallow	*Hirundo rustica*	2, 3, 4, 5	Foraging
Brewer's sparrow	*Spizella breweri*	5	Foraging, nesting
Bewick's wren	*Thryomanes bewickii*	3, 4, 5	Foraging, nesting in riparian areas
Black-billed magpie	*Pica pica*	2, 3, 4, 5	Foraging, potential nesting in nearby cottonwoods
Black-crowned night heron	*Nycticorax nycticorax*	2	Foraging
Black-necked stilt	*Himantopus mexicanus*	2	Foraging, potential nesting during wet periods
Brewer's blackbird	*Euphagus cyanocephalus*	2, 3, 4, 5	Foraging, nearby nesting
Brown-headed cowbird	*Molothrus ater*	2, 3, 4, 5	Foraging, nearby nest parasitism
Bullock's oriole	*Icterus galbula*	2, 3, 4, 5	Foraging, potential nesting in nearby cottonwoods
California gull	*Larus californicus*	2, 3	Mostly flyovers but potential foraging
California quail	*Callipepla californica*	4, 5	Foraging, nesting
Canada goose	*Branta canadensis*	1, 2, 3	Foraging, potential nesting during wet periods
Cinnamon teal	*Anus cyanoptera*	1, 2	Foraging, nesting during wet periods
Clark's grebe	*Aechmophorus clarkii*	1	Mostly associated with Washoe L.
Cliff swallow	*Hirundo pyrrhonota*	All	Foraging over all types, nesting in two large highway culverts
Common snipe	*Gallinago gallinago*	2	Foraging, potential nesting
Double crested cormorant	*Phalacrocorax auritus*	1, 2	Mostly associated with Washoe L.
European starling	*Sturnus vulgaris*	3, 4, 5	Foraging, nesting in nearby areas with trees or buildings
Forster's tern	*Sterna forsteri*	--	Mostly associated with Washoe L.
Gadwall	*Anus strepera*	1, 2	Foraging, potential nesting during wet periods

Great blue heron	*Ardea herodias*	2	Foraging
Green winged teal	*Anas crecca*	1, 2	Foraging, potential nesting during wet periods
Horned lark	*Eremophila alpestris*	2, 3, 4, 5	Foraging, nesting
House wren	*Troglodytes aedon*	5	Foraging mostly near residential Area
Killdeer	*Charadrius vociferus*	2, 3, 4	Foraging, potential nesting
Lesser yellowlegs	*Tringa flavipes*	2	During migration
Mallard	*Anas platyrhynchos*	1, 2	Foraging, potential nesting during wet periods
Marsh wren	*Cistothorus palustris*	2, 4	Foraging, nesting
Mourning dove	*Zenaida macroura*	3, 4, 5	Foraging, potential nesting in nearby trees
Northern flicker	*Colaptes auratus*	2, 3, 4, 5	Foraging
Northern harrier	*Circus cyaneus*	2, 3, 4, 5	Foraging over all types, potential nesting
Northern pintail	*Anas acuta*	1, 2	Foraging, potential nesting during wet periods
Northern rough-winged swallow	*Stelgidopteryx serripennis*	2, 3, 4, 5	Foraging
Northern shoveler	*Anas clypeata*	1, 2	Foraging, potential nesting during wet periods
Pied-billed grebe	*Podilymbus podiceps*	1, 2	Foraging, potential nesting during wet periods
Red-tailed hawk	*Buteo jamaicensis*	2, 3, 4, 5	Foraging
Red-winged blackbird	*Agelaius phoeniceus*	2, 3, 4, 5	Foraging, potential nesting nearby and in riparian shrubs/trees
Ring-necked duck	*Aythya collaris*	1, 2	Foraging, potential nesting during wet periods
Rock pigeon	*Columba livia*	4, 5	Foraging but mostly flyovers
Ruddy duck	*Oxyura jamaicensis*	1, 2	Foraging, potential nesting during wet periods
Savannah sparrow	*Passerculus sandwichensis*	2, 3	Foraging, nesting
Short-eared owl	*Asio flammeus*	2, 3	Foraging, potential nesting
Snowy egret	*Egretta thula*	2, 3	Foraging
Song sparrow	*Melospiza melodia*	2, 3, 4, 5	Foraging, nesting in shrubs and trees
Sora	*Porzana carolina*	2, 3	Foraging, potential nesting
Spotted sandpiper	*Actitis macularia*	2, 3, 4, 5	Foraging, potential nesting near water
Spotted towhee	*Pipilo erythrophthalmus*	4, 5	Foraging, nesting
Vesper sparrow	*Pooecetes gramineus*	3, 4, 5	Foraging, nesting
Virginia rail	*Rallus limicola*	2	Foraging, nesting
Western kingbird	*Tyrannus verticalis*	2, 3, 4, 5	Foraging over all types, potential nesting in nearby trees and structures
Western meadowlark	*Sturnella neglecta*	3, 5	Foraging, nesting

White-faced ibis	*Plegadis chihi*	2	Foraging, nesting near Washoe L.
Willet	*Catoptrophorus semipalmatus*	2	Foraging, nesting
Willow flycatcher	*Empidonax traillii*	2, 3, 4	Foraging, potential nesting
Wilson's phalarope	*Phalaropus tricolor*	2	Foraging, nesting
Yellow warbler	*Dendroica petechia*	2, 3, 4	Foraging, potential nesting
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	2, 3, 4	Foraging, potential nesting
Mammals			
Bat species		All	Foraging
Black-tailed jackrabbit	*Lepus californicus*	3, 5	Foraging, breeding
Coyote	*Canis latrans*	2, 3, 4, 5	Mostly foraging, potential denning
Deer mouse	*Peromyscus maniculatus*	3, 5	Foraging, breeding
Desert cottontail	*Sylvilagus audubonii*	3, 5	Foraging, breeding
Montane vole	*Microtus montanus*	2, 3	Foraging, breeding
Mule deer	*Odocoileus hemionus*	2, 3, 4, 5	Potential foraging
Muskrat	*Ondatra zibethicus*	1, 2, 4	Foraging
Vagrant shrew	*Sorex vagrans*	2, 3	Foraging, breeding
Fishes			
Brook trout	*Salvelinus fontinalis*	1	Seasonal during flows
Paiute sculpin	*Cottus beldingii*	1	Seasonal during flows
Rainbow trout	*Oncorhynchus mykiss*	1	Seasonal during flows
Tui chub	*Gila bicolor*	1	Seasonal during flows
Reptiles			
Garter snake	*Thamnophis sp*	All	Foraging, breeding
Rattlesnake	*Crotalus sp*	2, 3, 4, 5	Foraging, breeding
Northern sagebrush lizard	*Sceloporus graciosus graciosus*	3, 4, 5	Foraging, breeding
Western fence lizard	*Sceloporus occidentalis*	3, 4, 5	Foraging, breeding
Amphibians			
Bullfrog	*Rana catesbeiana*	1, 2	Foraging, breeding
Pacific tree frog	*Pseudacris regilla*	1, 2	Foraging, breeding
Western toad	*Bufo boreas*	2, 3, 4, 5	Foraging, breeding

Sources: Eidel (2006), Floyd et al. (2007), Hill and Baker (2007), Powell (2010), Aversa et al. (2010). Note: Almost all birds listed were reported by Eidel (2006). Mammals, reptiles, and amphibians were reported by Hill and Baker (2007).

[1] Habitat types on Winters Ranch: 1 = Stream
2 = Wet meadow (including ephemeral ponds)
3 = Dry meadow
4 = Riparian
5 = Shrubland

Appendix D-3. BLM Nevada Sensitive Animal Species That Occur or May Occur on Winters Ranch (BLM, 2003).

Common Name	Scientific Name	Occurrence
Amphibians		
Northern leopard frog	*Rana pipiens*	May occur
Birds		
Black tern	*Chlidonias niger*	May occur
Ferruginous hawk	*Buteo regalis*	May occur
Golden eagle	*Aquila chrysaetos*	May occur
Least bittern	*Ixobrychus exilis*	May occur
Loggerhead shrike	*Lanius ludovicianus*	May occur
Long-billed curlew	*Numenius americanus*	May occur
Long-eared owl	*Asio otus*	May occur
Northern goshawk	*Accipiter gentilis*	May occur
Peregrine falcon	*Falco peregrinus*	May occur
Prairie falcon	*Falco mexicanus*	May occur
Sandhill crane	*Grus canadensis*	May occur
Short-eared owl	*Asio flammeus*	Observed
Swainson's hawk	*Buteo swainsoni*	May occur
Mammals		
Big brown bat	*Eptesicus fuscus*	May occur
Brazillian free-tailed bat	*Tadarida braziliensis*	May occur
California myotis	*Myotis californicus*	May occur
Fringed myotis	*Myotis thysanodes*	May occur
Hoary bat	*Lasiurus cinereus*	May occur
Little brown myotis	*Myotis lucifugus*	May occur
Long-eared myotis	*Myotis evotis*	May occur
Long-legged myotis	*Myotis volans*	May occur
Pallid bat	*Antrozous pallidus*	May occur
Silver-haired bat	*Lasionycteris noctivagans*	May occur
Small-footed myotis	*Myotis ciliolabrum*	May occur
Spotted bat	*Euderma maculatum*	May occur
Townsend's big-eared bat	*Corynorhinus townsendii*	May occur
Vesper sparrow	*Pooecetes gramineus*	Observed
Western pipistrelle bat	*Pipistrellus hesperus*	May occur
Invertebrates		
California floater	*Anodonta californiensis*	May occur
Carson Valley silverspot	*Speyeria nokomis carsonensis*	May occur
Carson Valley wood nymph	*Cercyonis pegala carsonensis*	May occur
Mono Valley checkerspot	*Euphydryas editha monoensis*	May occur

Appendix D-4. Migratory Bird Species That Occur or May Occur on Winters Ranch (BLM, 2007b).

Common Name	Scientific Name	Occurrence
Game Birds of Conservation Concern		
Band-tailed pigeon	*Columba fasciata*	May occur
Canvasback	*Aythya valisineria*	May occur
Mallard	*Anas platyrhynchos*	Observed
Mourning dove	*Zenaida macroura*	Observed
Northern pintail	*Anas acuta*	Observed
Ring-necked duck	*Aythya collaris*	Observed
Wood duck	*Aix sponsa*	May occur
Bird Species of Conservation Concern		
American avocet	*Recurvirostra americana*	May occur
American bittern	*Botaurus lentiginosus*	Observed
Brewer's sparrow	*Spizella breweri*	Observed
Ferruginous hawk	*Buteo regalis*	May occur
Golden eagle	*Aquila chrysaetos*	May occur
Loggerhead shrike	*Lanius ludovicianus*	May occur
Long-billed curlew	*Numenius americanus*	May occur
Northern goshawk	*Accipiter gentilis*	May occur
Northern harrier	*Circus cyaneus*	Observed
Peregrine falcon	*Falco peregrines*	May occur
Prairie falcon	*Falco mexicanus*	May occur
Sage sparrow	*Amphispiza belli*	May occur
Short-eared owl	*Asio flammeus*	Observed
Swainson's hawk	*Buteo swainsoni*	May occur
Willet	*Tringa semipalmata*	Observed
Wilson's phalarope	*Phalaropus tricolor*	Observed

Appendix E. List of Acronyms Used in the Winters Ranch Management Plan.

AFA	Acre-Feet per Annum
BLM	Bureau of Land Management
BMP	Best Management Practice
CFR	Code of Federal Regulations
EA	Environmental Assessment
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FR	Federal Register
GIS	Geographic Information System
IBA	Important Bird Area
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Level
NAC	Nevada Administrative Code
NDEP	Nevada Division of Environmental Protection
NDOW	Nevada Department of Wildlife
NDWR	Nevada Division of Water Resources
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OHV	Off-Highway Vehicle
RWPC	Regional Water Planning Commission
SHPO	State Historic Preservation Officer
SNPLMA	Southern Nevada Public Land Management Act
THPO	Tribal Historic Preservation Officer
VRM	Visual Resource Management
USFWS	U.S. Fish & Wildlife Service
V&T	Virginia & Truckee
WCDWR	Washoe County Department of Water Resources
WMA	Wildlife Management Area
WVWG	Washoe Valley Working Group